Declaration of Nikola Kirilov Kasabov, Ph.D., MSc.
Under 37 C.F.R. 1.132

I, Nikola Kirilov Kasabov, declare that:

1.   I am a citizen of New Zealand.

2.   I am Professor and Personal Chair, School of Computer and Informational Sciences, Auckland University of Technology, and I am founding Director of Knowledge Engineering and Discovery Research Institute, KEDRI, of Auckland, New Zealand. I have earned a Ph.D. from the Sofia Technical University, Bulgaria. I am author of 9 books, have edited 3 scientific research books, authored 38 book chapters, authored 106 peer-reviewed journal articles, authored 4 major reviews, authored 15 referred conference proceedings, 187 papers published in peer-reviewed conference proceedings. I have presented 41 invited keynote lectures to international meetings, published 14 volumes on computer software and am Inventor on 26 US or other patents and patent applications. I have been actively engaged in development of computerized methods for knowledge acquisition and analysis, and have been active in teaching, research and professional activities for many years. I am familiar with the state of the art of information sciences, artificial intelligence, knowledge engineering, bioinformatics, brain-like computing and neuroinformatics, signal, speech and image processing and parallel computing systems.. A copy of my Curriculum Vitae is attached to this Declaration as Appendix 1.

3.   I am an inventor of US Application No: 10/524,754, filed 29 August 2005, entitled "Medical Decision Support Systems Utilizing Gene Expression and Clinical Information," which is a US National Phase application based on PCT International Application No: PC/US03/25563, filed 15 August 2003, which claims priority to US Provisional Patent Application No: 60/403756, filed 15 August 2002 (herein, the "754" application).

4.   I have read the Office Action mailed 9 October 2008, and the references cited in rejecting the claims of the 754 application, namely Downs, Barnhill and Hemstreet.

5.   The pending claims are not obvious over combinations of Downs, Barnhill and Hemstreet for at least the following reasons.

6.   A person of ordinary skill at the time the application was filed would not know how to modify either combination of the above references to obtain the claimed subject matter.

7.   The application as filed discloses steps that are not present in the prior art. The application as filed includes technical details, including exact steps and algorithms, the results of implementing those steps (e.g., the improved accuracy of the method), how those methods lead to the improved accuracy and how they are missing from the prior art.

8.   A person of ordinary skill is a medical practitioner with access to separate gene expression and clinical information classifiers.   Such available classifiers include regression formulas, Bayesian classifiers, neural networks, SVM, and other known models known in the art, or has separate data sets that allow him or her to create such separate classifiers.

9.   A person of ordinary skill would apply the clinical data of a patient to the clinical data classifier and also apply the genetic data of the same patient to the gene classifier. According to the combined teachings of Downs, Barnhill and Hemstreet, the person of ordinary skill would identify the classifier with the higher reported accuracy, and would consider the combined data to have that degree of accuracy.

10.   Downs does not relate to our invention of integrated classifiers based on separate gene expression and clinical data or any other two or more separate data sets related to the same problem and its outcome. Downs demonstrates the use of the well-known fuzzy ARTMAP neural network model on a single clinical data set. The use of voting is to avoid one of the problems of the fuzzy ARTMAP, namely the dependence of the evolved structure on the order of the sample (example) presentation. However, this has nothing to do with our claimed methods. More specifically, the extracted rules based on Downs are only propositional and based on binary TRUE/FALSE input variables and output categories.

11.   Barnhill is a US patent that presents discussion of general approaches and desired results, but does not provide any descriptions of actual methods to be used or examples of outcomes achieved using those methods to provide increased accuracy of a combined outcome prediction compared to the accuracy of individual outcomes.

12.   Hemstreet is a US patent that, like Barhnill, does not provide any descriptions of actual methods to be used or examples of outcomes achieved using those methods to provide increased accuracy of a combined outcome prediction compared to the accuracy of individual outcomes.

13.   The rules extracted using our claimed methods are fuzzy, both quantitatively and qualitatively, and can take any type of variables, including binary, categorical or continuous. Our methods can thus link the continuous variable of gene expression with clinical variables, unlike the methods of Downs, Barnhill or Hemstreet or the combination of those references together.

14. Examples of our methods and results obtained are described in the application as filed. For example, Page 16 describes one method, based on exhaustive search in the parameter values space. . Results of such a method are depicted in FIG. 4, in which it is apparent that parameters $\beta 1$ and $\beta 2$ represent accuracies of individual class predictors, but if either is considered to be zero (i.e., the system uses only one predictor), the overall accuracy is less than the accuracy of a combined system in which both predictors are used, and the results can be greater than either predictor individually.

15.   In the application (page 14 of the published application), Lymphoma outcome predictions are provided as a case study.

16.   A clinical data classifier built on clinical data only had a predictive accuracy of 73.2%. A gene expression classifier, built separately on gene expression data only, had an accuracy of 78.5%. If both clinical and gene expression data is available for a new patient, the predicted outcome by the gene expression classifier will be considered only if it has a higher accuracy of outcome prediction than the accuracy based on clinical information. Thus, using the prior art methods, the patient prediction accuracy will be 78.5%.

17.   If new data is available in which both gene expression information and clinical information is available, the person of ordinary skill would not be able to use the new data to combine with the two existing classifiers and achieve a higher accuracy than the accuracy of any of the classifiers.

18. Our claimed methodology for combining clinical and gene expression classifiers built separately for a better prediction on new data that has both variables measured, is explained in paragraphs 074 till 085and Fig. 3b. An information scientist can implement the explanation into the following formulas:
Class unit layer:
Combined Class A Output: ClassA output = (C1/classA x $\beta1$)+(C2/classA x $\beta2$)
Combined Class B Output: ClassB output = (C1/classB x (1- $\beta1$)) + (C2/classB x (1- $\beta2$))
 Decision layer (optional):
Combined output = (Combined ClassA output x α) + (Combined ClassB output x (1- α)),
 The final output will be between 0 and 1. If close to 0, the diagnosis is Class A if close to 1, the final   diagnosis is Class B.
 The claimed methodology is illustrated with the use of three methods for calculating the introduced parameters $\beta1$, $\beta2$ and α:
-   Method (1): exhaustive search;
-   Method (2): Statistical validation;
-   Method (3): Backpropagation learning algorithm for a multilayer neural network.

Method one is broadly illustrated on a bench-mark data of Lymphoma outcome prediction published by Shipp et al in paragraphs [0086] to [0093] and in FIG. 4 and FIG. 5. The data has a clinical integrated variable IPI and a set of 11 gene expression variables.

19.   In contrast with the prior art methods, our methods (1) and (3) disclose how to do that through tuning three parameters, $\beta1$, $\beta2$ and α using the new data set. Applying our method (1) results on the same Lymphoma data in a combined classifier system with a much higher accuracy of 87.5% ! Method (2) of our invention discloses how two separate classifiers can be used on a single new patient data even if there is no other patient data set based on both clinical and gene expression data.

Declaration of Nikola Kirilov Kasabov   3

20.   There are no prior art methods disclosed in Downs, Barnhill or Hemstreet nor their obvious combinations that provide how gene expression and clinical data sets related to the same problem (but not necessarily available as a combined data vector for each person) can be integrated into a combined classifier system that produces a better accuracy than any of the single data sets used. Neither of the combinations of the cited references suggest how gene and clinical variables can be integrated in a fuzzy rule (profile) of similar samples to improve the understanding in the interaction between the gene and the clinical variables.

21.   The differences between the combinations of prior art references (Downs, Barnhill and Hemstreet) and our invention are so large that they have not been overcome until our invention.

22.   As a result of our claimed invention, the person of skill in the art is provided new methods and tools to improve diagnosis and evaluation of patient's condition. This desirable result was not possible prior to our invention.

23.   All statements made herein of my own knowledge are true and that all statements made on information and belief are believe to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under §1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issue thereon.

Date: 23 January 2009   By:

Nikola Kirilov Kasabov

Appendix 1

Copy of Curriculum Vitae

Nikola Kirilov Kasabov

Curriculum Vitae

Personal Information

Name:

Nikola Kirilov Kasabov
nkasabov@aut.ac.nz
http://www.kedri.info

Qualifications

Qualification name:	Institution:	Date of Graduation:
PhD (Math. Sciences)	Technical University, Sofia	07.04.1975
MSc (Applied Math.)	Technical University, Sofia	30.09.1972
MSc (Comp. Science and Eng.)	Technical University, Sofia	30.09.1971

Professional Affiliations/Memberships

RSNZ (Fellow of the Royal Society of New Zealand)

NZCS (Fellow of the New Zealand Computer Society)

IEEE (Senior Member, Institute of Electrical and Electronic Engineers)

INNS (International Neural Network Society) – President-Elect

APNNA (Asia-Pacific Neural Network Assembly) – President

Distinctions (e.g., prizes, scholarships, invited memberships, notable posts, honorary degrees):

The Bayer Science Innovators Award, 2007

The Vice Chancellors 2007 Awards for Research Excellence and Research Supervision

DAAD Visiting Professorship, 2005-2006, Germany

Asia Pacific Neural Network Assembly (APNNA) Excellent Service Award for overall contribution in the area of Neuro-information Processing and Intelligent Systems, 2005.

President of the Asian Pacific Neural Network Assembly (APNNA), 1997-1998.

International Neural Network Society, President-Elect

IEEE (Institute of Electrical and Electronic Engineers), Computational Intelligence Society, Member of the Neural Networks Technical Committee, Chair Taskforce Evolvable Neural Systems, since 2004

Best Paper Award, IEEE 2003 International Conference on Neural Networks & Signal Processing, Nanjing, China, December 2003.

Fellow of the Royal Society of New Zealand, since 2001.

The Royal Society of New Zealand Silver Medal for Contribution to Science and Technology, 2001.

Senior Member of IEEE, since 2001.

Fellow of the New Zealand Computer Society, since 2001.

International Neural Network Society, Distinction, Washington DC, 1999.

New Zealand FRST Award for supervision of a PhD student (M. Laws), 1999.

Best paper award, The Fourteenth European Meeting on Cybernetics and System Research, University of Vienna, 04/1998.

President of the Asian Pacific Neural Network Assembly (APNNA), 1997-1998.

IFIP (International Federation for Information Processing), Member of committee 12 for Artificial Intelligence, since 1997

NWO/SION (Dutch Organisation for Scientific/Computer Science) Research) Grant, University of Maastricht, The Netherlands, 1998.

Research Fellowship Grant, University of Twente, The Netherlands, 1998.

Prize for Invention with High Practical Applicability, National Institute of Inventions, Bulgaria, 1992.

Leverhulme Trust Research Fellowship, University of Essex, United Kingdom, 1989/90.

Czechoslovakia, Research Fellowship, Institute of Cybernetics, Bratislava, 1987.

Research Fellowship, Research and Education Ministry, The Netherlands, 1984.

Languages (in addition to English)

Bulgarian, fluently written and spoken

Russian, written and spoken

German, limited

Italian, beginner

Employment History

    (a)   <u>Present Position</u>
           Professor and Personal Chair, School of Computer and Information Sciences, Auckland University of Technology, since June 2002.
           Founding Director. Knowledge Engineering and Discovery Research Institute, (www.kedri.info), Auckland University of Technology, since June 2002.

    (b)   <u>Employment History</u>
- Professor and Personal Chair, Department of Information Science, University of Otago, 02/1999 – 06/2002.
- Founding Director, Knowledge Engineering/Discovery Laboratory, University of Otago, 1994 – 2002 (http://kel.otago.ac.nz).
- Associate Professor, Department of Information Science, 1996 to 1998.
- Senior Lecturer, University of Otago/Department of Information Science, 1992 –1995.
- Research Fellow and Senior Lecturer, University of Essex (UK)/Department of Computer Science, 1989 –1991.
- Associate Professor, Technical University (TU) (Sofia)/Department of Computer Science, 1988 – 1989.
- Director of International Graduate School in Artificial Intelligence, TU Sofia, 1988 – 1991.
- Lecturer and Senior Lecturer, TU Sofia/ Department of Computer Science, 1978 – 1988.
- Research Fellow, TU Sofia/Department of Computer Science, 1976 – 1978.

Other Relevant Experience

    (a)   <u>Experience Working in Other Countries</u>
           Germany, DAAD Visiting Professor, U. Kaiserlautern, 1.10.2005-28.02.2006.
           Italy, Visiting Professor. University of Trento: March-April 2001; March-June 2000; March – May 1998.
           The Netherlands, Visiting Research Fellow: University of Twente, 06/ 1998; University of Maastricht, 1-2/ 1998.
           The UK, Leverhulme Trust Research Fellow, University of Essex, 1989-1990.
           Czechoslovakia, Visiting Research Fellow, Institute of Cybernetics (Bratislava) 6-7/1987.
           The Netherlands, Research Fellow, University of Delft, 2-7/ 1984.

    (b)   <u>National/International Collaboration</u>
           Collaboration with the Kyushu Institute of Technology, Japan, since 1993
           Collaboration with the National Institute of Communication and Information Technologies, NiCT, Tokyo, Japan, since 2007
           Coordinator and programme leader of a collaborative research project "Connectionist-based intelligent information systems" funded by FRST and NERF with the participation of researchers from universities and industrial organisations in New Zealand: Auckland University of Technology, University of Auckland, Crown Research Institutes, Lincoln University, PEBL, PSL, Navman, Fonterra, Genesis R&D, ViaLactia and other organisations in NZ; 1995-2007.
           Research associate and consultant: Pacific Edge Biotechnology Ltd. - PEBL NZ, since 1997; NZ Bio-protection CoRE - Centre of Research Excellence, Lincoln, since 2003; SCOPE Project – U.Auckland, since 2002; RASP project – U.Auckland, since 2007.
           Director, NZ Bioinformatics Summer School, 2003 and 2004.
           Executive Committee and Scientific Committee member, Berkeley International Institute for Systems and Computational Intelligence, BIISC, UC Berkeley, since 2004
           Coordinator of SIG "Computational Intelligence in Bioinformatics" as part of BISC (Berkeley Initiative of Soft Computing). Department of Computer Science and Electrical Engineering, University of California at Berkeley, USA, since July 2002.
           Visiting researcher, National Cancer Institute, National Institute for Health - NIH, Frederick, Washington DC, since May 2002.
           Co-ordinator of exchange programmes, University of Twente and University of Maastrciht, The Netherlands, since 1998.

Co-ordinator of a research and teaching exchange agreement, Kyushu Institute of Technology, Japan, since 1996

RIKEN, Brain Science Institute, Japan, Collaboration on research projects, since 2001.

Founder of the Bionformatics Group, Technical University of Sofia – branch Plovdiv, Bulgaria, 2004

The International Consortium for Speech Translation Advanced Research, C-STAR II, Affiliate member, 1996-1999.

Research Activities

(a) <u>Research Expertise</u>

Information Sciences

Artificial Intelligence (Neural Networks, Fuzzy systems, Evolutionary Computation)

Knowledge Engineering

Bioinformatics

Brain-like computing and neuroinformatics

Signal, Speech and Image Processing

Parallel Computer Systems

(b) <u>Experience in Applied R & D, contract research, consultancies, patents</u>

Co-founder and Chief information scientist of *Pacific Edge Biotechnology Ltd*, www.pebl.co.nz, established in 2001, based in Dunedin, New Zealand.

Founder of *Knowledge Engineering Consulting Ltd.*, www.keconsult.com, established 2001.

Consultant: PEBL (since 1997); ViaLactia Biosciences. Auckland (2005); FONTERRA, Auckland, since 2004; Lucent-Telecom, since 2005; Fidelity genetics (since 2005); Bimetric technology Ltd (since 2005); Waste Solutions Ltd, Dunedin (1994-2001); Hort Research (since 1996); Steel Manufacturing Company Kremikovtsi, Sofia, Bulgaria (1988 - 1992); Institute for Agricultural Research, Plovdiv, Bulgaria (1987-89); Medical Academy, Sofia, Bulgaria (1987-88).

Patents – total 26: 2 New Zealand (2 PCTs), 6 USA, 1 UK, 1 France, 1 Germany, 1 Russia, 1 Czechoslovakia, 13 Bulgaria,

(c) <u>Research Grants</u>

<u>Last 10 Years</u>

(1) Principal or joint principal researcher
- 2002/2007, NERF, Connectionist-Based Intelligent Information Systems, $360,000 p.a
- 2006, Fonterra, Predicting milk volume production, NZ$78,000
- 2006, Telecom/Lucent/Medialab, Close loop optimisation, NZ$70,000
- 2002/2006, HRC, Predicting colorectal cancer outcome using gene expression profiling, $300,000 pa
- 2002/2004, Cancer Society of NZ. Neuroblastoma treatment prediction and classification systems, $80,000pa
- 2003/2004, Fonterra, Evaluation of evolving connectionist techniques and their applications, $55,000
- 2004, ViaLactia Biosciences, NZ herd phenotype quality analysis, $75,000.
- 2001, University of Otago, Connectionist-Based Information Systems, Emerging Theme Research, $20,000, 01.01.01 – 01.01.02
- 2000, University of Otago, Connectionist-Based Information Systems, Emerging Theme Research, $20,000, 01.01.00 – 01.01.01
- 1999, University of Otago, Connectionist-Based Information Systems, Emerging Theme Research, $15,000 01.01.99 – 01.01.00
- 1998/2002, FRST and NERF, Connectionist-Based Intelligent Information Systems, $360,000 p.a., 1.07.98 - 1.07.2002
- 1996/98, FRST UOO-606, Connectionist-Based Information Systems, $385,000 p.a., 1.07.96-1.07.98
- 1995/98, FRST UOO-509, Spatial Analysis Systems and Management, $303,000 p.a., 30.10.95-30.10.98
- 1997/98, University of Otago, Connectionist Based Information Systems, Emerging Research Theme, $15,000, 1.07.97-1.07.98

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- 1998/99, Otago Research Grant, Adaptive neuro-fuzzy methods in pharmaceutical sciences, $30,000,1.7.98 - 1.7.99
- 1997/98, Otago Research Grant, Neuro-fuzzy methods in pharmaceutical sciences, $35,000,1.7.97 - 1.7.98
- 1995, Otago Research Grant, Methods and Tools for Building Adaptable Speech Interfaces to Standard and Fuzzy Databases, $25,193, 1.1.95-30.11.95
- 1995-1997, Waste Solutions Ltd, Neuro-Fuzzy Control, $20,000, 1.7.95-31.12.96
- 1994/95, FRST, Development of a Spatial Analysis Tool Box, $57,000, 30.10.94-30.10.95
- 1994, TELECOM New Zealand Ltd, Automatic Speech Recognition, $24,500, 1.5.94-31.12.94
- 1994, Departmental Research Grant, A Software Environment for Building Fuzzy Connectionist Production Systems - FuzzyCOPE, $10,000, 30.5.94-28.2.95

(2) Contributing researcher:

2007-2008, Health Research Council, RASP – Rapid assessment of smoking status using change in acoustic parameters of voice, U.Auckland, 150,000$

2004-2008, NERF, SCOPE – Predicting abnormalities in pregnancy (Program leader - Assoc.Prof. Robyn North, University of Auckland), 1.5 mln pa

1999/2001, Policy problems and policy options under alternative monetary regimes, with special reference to Italy in the EMU, University of Trento, Italy, IL700 mln, with Prof. Axel Bengt, Prof. M.Fedrizzi and Prof. L.Erzegovesi.

1998/2000, FRST, Biological Orchard Production Systems, appr.$200,000 p.a., 1.7.1998 - 1.7.2002, Dr. H.Wearing, HortResearch

1998/2002, FRST, Distributed Information Systems, appr.$350,000 p.a., 1.01.98- 31.12.2002, Dr. M. Purvis

1998/2002, FRST, Spatial Analysis Systems and Management, appr.$100,000 p.a., 1.10.1998 - 1.10.2002, A/Prof. G.Benwell.

Prior to the Last 10 Years

Principal researcher of projects funded by the Bulgarian Ministry of Science and Technology (BMST): Parallel processing systems (1989-1991); Expert systems for agricultural applications (1988-91); Expert systems for planning and decision making (1988-1991); Intelligent tutoring systems (1987-1989); The design and the implementation of GESMI- an expert system shell (1985-87).

Principal researcher of projects funded by the Bulgarian National Institute of Inventions: Stack memory device (1985-87); Multi-register memory systems (1984-1986).

Principal researcher of academic and industrial projects in Bulgaria (1974-1988): Multi-microprocessor systems for the Metallurgy Industry (1984-1988); Bubble-domain memories for computer systems (1984-86); Performance evaluation of computer systems (1978-1980); Information systems for financial operations in the Kazanluk textile industry (1974-1975).

(d) Supervision of Postgraduate Students
Completed in the last 10 Years

Vishal Jain, System biology – data analysis, modelling and knowledge discovery, completed 2008

Simei Wysosky, Brain like speech and image integration methods and systems, AUT, completed 2008

Maggie Ma, Evolving connectionist systems for decision support in medical prognosis, NZ Top Achiever Doctoral Scholarship TAD, AUT, completed 2008

Paulo Gottgtroy, Methodology and a framework for ontology building on the case study of biological and medical data, TAD, AUT, completed 2008.

David Zhang, Integrating speech and image signals in intelligent systems, AUT, completed 2008

PhD, Liang Goh, Methods for information integration and knowledge discovery on gene expression data, Auckland University of technology, 2002-2005

PhD, David Parry, On-line intelligent data mining for medical data, AUT, 2000-2005

PhD, Evolving connectionist systems, Michael Watts, University of Otago, 1999-2004

PhD, Connectionist-based adaptive expert systems and image analysis in horticulture, Brendon Woodford, University of Otago, 1999-2004

PhD, Microarray Gene Expression Data Analysis and Knowledge Discovery, Matthias Futschik, University of Otago, NZ, 2000-2003.

PhD, Signal processing and acoustic modelling for speech recognition systems, Waleed Abdulla, University of Otago, 1998-2002.

PhD, Evolving connectionist systems for dynamic modelling, Q.Song, University of Otago, 1998-2002.

PhD, Maori language integration in the age of information technology: computational approach, Mark Laws, University of Otago, 1998 -2002.

PhD, Connectionist systems for speech recognition, R.Kilgour, University of Otago 1997-2001.

PhD, Neuro-fuzzy techniques for intelligent systems, J. Kim, University of Otago, 1996-1999

PhD, Probabilistic-connectionist processing to improve image pattern recognition, S. Israel, University of Otago, 1995-1999

PhD, Connectionist production systems, TU, Sofia, Bulgaria, S.Shishkov, 1990-1994

PhD, Denotation semantics for AI, TU, Sofia, Bulgaria, N.Nikolaev, 1990-1994

MPhil, Production systems on associative memories, T. Lin, University of Essex, 1990-92.

MSc, N.Mohan, Transductive reasoning and personalised modelling, , 2005

MSc, Andreas Magusin, Bi-clustering in bioinformatics, Auckland University of Technology, 2003-04

MSc, On-line decision support systems in bioinformatics, M.Middlemiss, University of Otago, 2001.

MSc, A Bilingual speech interface for New Zealand English to Maori, M. Laws, University of Otago, 2001

MSc, Hybrid systems and neural networks for speech recognition, R.Kilgour, University of Otago, 1994 - 1996.

MCom, Intelligent systems for control, M.Bailey, 1997

MCom, S.Sinclair, Multi-modular speech recognition systems, University of Otago, 1997

MSc, Speech recognition and neural networks, TU Sofia, D. Nikovski, 1992.

MSc, Hybrid system COPE, TU Sofia, Bulgaria, C. Neshev, 1992.

MSc, Machine learning, TU Sofia, Bulgaria, S. Petrova, 1992.

MSc, FLIPS Fuzzy Expert System, TU Sofia, Bulgaria, T.Dekova, 1992.

MSc, Neural networks for game simulation, TU Sofia, Bulgaria, P. Kalinkov, 1992.

MSc, L. Chen, Simulation of CLIPS on associative computer memory, University of Essex, 1990.

MSc, C. Tan, Template-based learning, University of Essex, 1990-1991.

Currently supervising PhD students:

Harya Widiputra, Dynamic interaction networks for multiple financial time series prediction, 2007-

Stefan Shliebs, Quantum neurocomputation, AUT, since 2007

Raphael Hu, Integrated bioinformatics, AUT, since 2007

Anju Verma, Personalised decision making based on gene data, AUT, since 2005

Francis Josef, Design and computational intelligence, since 2006

Boris Bacic, Connectionist and hybrid methods for video data analysis, AUT, since 2003.

Snejana Soltic, Intelligent Decision Support systems and image data analysis, AUT, since 2003.

Akbar Ghobakhlou, PhD Adaptive Speech Recognition Systems, University of Otago, since 1999.

Jay Swope, Modelling of bio-medical time series, University of Otrago, since 1998.

Prior to the Last 10 Years

Supervised 43 successful MSc dissertations (1977-1990), Technical University of Sofia, Department of Computer Science.

Supervised 5 successful postgraduate diplomas in Artificial Intelligence, International Graduate School of AI, technical University of Sofia (1988 -1991).

Teaching activities

Introduced and taught the following academic courses:

Knowledge engineering and intelligent systems, TU Kaiserlautern, Germany, (Postgr. level), 2005/06

Evolving connectionist systems (Qualification level), Singapore, Malaysia, 2002,2003 and 2004.

Data mining and knowledge engineering, (Masters level), Auckland University of Technology, since 2003

Bioinformatics, (Masters level), Auckland University of Technology, since 2004

Data, information and knowledge (Undergraduate level), University of Otago, NZ, 2001

Intelligent systems (Undergraduate level), University of Otago, NZ, 1993

Neural networks and fuzzy systems, 1993 -2002 (Postgraduate level) University of Otago, NZ (The course was re-named to "Advanced knowledge engineering" in 1999)
Programming techniques, (Undergraduate level), 2000-2001, University of Essex, UK
Expert systems (Postgraduate level), 1984, Technical University of Sofia, Bulgaria
Parallel processing (Postgraduate level), 1984, Technical University of Sofia, Bulgaria
Analysis and synthesis of algorithms. (Undergraduate level), 1980, Technical University of Sofia,
· Bulgaria
Computing (Undergraduate level), 1978, Technical University of Sofia, Bulgaria

Publications

(a) Books
Authored
1. Kasabov, N. *Evolving Connectionist Systems: The Knowledge Engineering Approach (new edition)*, Springer Verlag, London, (2007) 458p
2. Benuskova, L. and N.Kasabov, Computational neuro-genetic modelling: Integrating bioinformatics and brain science data, information and knowledge via computational intelligence, Springer, New York, 2007, 290 pages
3. Kasabov, N. *Evolving connectionist systems: Methods and applications in bioinformatics, brain study and intelligent machines*, Springer Verlag, London, (2003) 308p
4. Kasabov, N. *Foundations of Neural Networks, Fuzzy Systems and Knowledge Engineering*. Cambridge, Massachussets, MIT Press (1996) 550p
5. Kasabov, N. and Romanski, R. *Computer Architectures and Techniques* Sofia, Technika (1992) 435p (in Bulgarian)
6. Stoichev, S. and Kasabov, N. *Programming in PASCAL*. Sofia, Technika (1989) 136p (in Bulgarian)
7. Stoichev, S. and Kasabov, N. *Synthesis and Analysis of Algorithms*. Sofia, Technika (1988) 84p (in Bulgarian)
8. Stoichev, S. and Kasabov, N. *Computer Architectures and Techniques*. Sofia, Technika (1986) 348p (in Bulgarian)
9. Stoichev, S. and Kasabov, N. *Computers - Theory and Practice (Programming of Microprocessors)*. Sofia, Technika (1984) 120p (in Bulgarian)

Edited scientific, research books:

1. Kasabov, N. (ed.) *Future Directions for Intelligent Systems and Information Sciences*, Heidelberg, Physica-Verlag (Springer Verlag) (2000), 420pp
2. Kasabov, N. and Kozma, R. (eds.) *Neuro-Fuzzy Techniques for Intelligent Information Systems*, Heidelberg, Physica-Verlag (Springer Verlag) (1999), 450pp
3. Amari, S. and Kasabov, N. (eds.) *Brain-like Computing and Intelligent Information Systems*, Singapore, Springer Verlag (1998), 533 p.

(b) Book Chapters

1. N Kasabov, V Jain, L Benuskova, P Gottgtroy and F Joseph, Integration of Brain-Gene Ontology and Simulation Systems for Learning, Modelling and Discovery, In: Computational Intelligence in Medical Informatics, Series: Studies in Computational Intelligence, Vol. 85, Editors: Arpad Kelemen, Ajith Abraham, Yulan Liang, ISBN: 978-3-540-75766-5, 2008
2. N Kasabov, Q Song, L Benuskoval, P Gottgtroy, V Jain, A Verma, I Havukkala, E Rush, R Pears, A Tjahjana, Y Hu, S MacDonel, Integrating Local and Personalised Modelling with Global Ontology Knowledge Bases for Biomedical and Bioinformatics Decision Support, in: Smolin et al (eds) Computational Intelligence in Bioinformatics, Springer, 2008
3. Ravi, V., Kumar, P.R, Srinivas, E.R., Kasabov, N.K. A Semi-Online Training Algorithm for Radial Basis Function Neural Networks: Application to Bankruptcy Prediction in Banks, Chapter XV in: V.Ravi (ed) Advances in Banking Technology and Management, Information Science Reference, Hashley-New York, pp. 243-260
4. N.Kasabov, Brain-, Gene-, and Quantum Inspired Computational Intelligence: Challenges and Opportunities, in: W. Duch and J. Manzduk (eds) Challenges in Computational Intelligence, Springer, 2007 ISBN: 978-3-540-71983-0, 193-219

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5. Gottgtroy P., Kasabov N., Macdonell S., Evolving Ontologies for Intelligent Decision Support, Elsevier, Fuzzy Logic And The Semantic Web, Chapter 21, pp 415-439, 2006

6. Kasabov, N. , Liang Goh and Mike Sullivan, *Integrated Prognostic Profiles: Combining Clinical and Gene Expression Information through Evolving Connectionist Approach*, Chapter 10, in: Bajic. V and Tan Tin Wee (eds), Information Processing and Living Systems, Imperial College Press, Singapore, 2005, 695-706.

7. Kasabov, N. , Zeke Chan, Vishal Jain, Igor Sidorov and Dimiter Dimitrov, *Computational Modelling of Gene Regulatory Networks*, Chapter 8, in: Bajic., V and Tan Tin Wee (eds), Information Processing and Living Systems, Imperial College Press, Singapore, 2005, 673-686.

8. Kasabov, N., Z.Chan, Q.Song and D.Greer, Evolving neuro-fuzzy systems with evolutionary parameter self-optimisation, chapter in: *Do Adaptive Smart Systems exist?* Springer Verlag, Series Study in Fuzziness, vol.173, 2005

9. Kasabov N., and L. Benuskova, *Theoretical and Computational Models for Neuro-, Genetic-, and Neuro-Genetic Information Processing*, in: M. Rieth and W. Sommers (eds) Handbook of Theoretical and Computational Nanotechnology, Vol. X pp 1-38, American Scientific Publisher, 2005

10. Dimitrov, D. S., Igor A. Sidorov and Nikola Kasabov *Computational Biology*, in: M. Rieth and W. Sommers (eds) Handbook of Theoretical and Computational Nanotechnology, Vol. 1 (1) American Scientific Publisher, Chapter 21,2004

11. Kasabov. N. and D. Dimitrov. *Discovering gene regulatory networks from gene expression data with the use of evolving connectionist systems*. chapter in: L.Wang and Rajapakse (eds) Neural Information Processing, Volume 152, Springer Verlag, 2004

12. Kasabov, N. *Evolving Connectionist-based Decision Support Systems*, in: X.Yu, J.Kacprzyk (eds), Applied Decision Support with Soft Computing, series: Studies in Fuzziness and Soft Computing, vol. 124, Springer (2003).

13. Kasabov, N. *Decision support systems and expert systems*, in: M. Arbib (ed) Handbook of brain study and neural networks, MIT Press (2003).

14. Kasabov, N. *Brain-like functions in evolving connectionist systems for on-line, knowledge-based learning*, in: T. Kitamura (ed) What should be Computed to Understand and Model Brain Functions, FLSI Soft Computing Series, Volume 3, World Scientific (2001), 77-113.

15. Kasabov N., and G. Iliev, *A methodology and a system for adaptive speech recognition in a noisy environment based on adaptive noise cancellation and evolving fuzzy neural networks*, in: Neuro-Fuzzy Pattern Recognition, H. Bunke and A. Kandel. eds., World Scientific 2000, 179-203.

16. Kasabov, N., *Evolving and Evolutionary Connectionist Systems for On-Line Learning and Knowledge Engineering* in: Peter Sincak, Jan Vascak (eds) Quo Vadis Computational Intelligence? New Trends and Approaches in Computational Intelligence, Physica-Verlag, 2000, 361-369

17. Iliev, G. and Kasabov, N., *Dual-Tone Multiple Frequency Detection Using Adaptive Filters and Neural Network Classifiers* in: P. Sincak, J. Vascak, V. Kvasnicka, R. Mesiar (eds) The State of the Art in Computational Intelligence, Physica-Verlag, 2000, 302-307

18. Kasabov, N., Erzegovezi, L, Fedrizzi, M, Beber, A, and Deng, D, *Hybrid Intelligent Decision Support Systems and Applications for Risk Analysis and Prediction of Evolving Economic Clusters in Europe*, in: N. Kasabov (ed) Future directions for intelligent information systems and information sciences, Springer Verlag, 2000, 347-372

19. Kasabov. N., *Evolving connectionist systems – the new-Old AI Paradigm*, in: N. Kasabov (ed) Future directions for intelligent information systems and information sciences, Springer Verlag. 2000. 3-12

20. Taylor. J. and Kasabov. N. *Modelling the Emergence of Speech and Language through Evolving Connectionist Systems*, in: N. Kasabov (ed) Future directions for intelligent information systems and information sciences, Springer Verlag, 2000, 102-126

21. Swope, J.A.. Kasabov, N.. and Williams, M., *Neuro-fuzzy modelling of heart rate signals and applications to diagnostics*, in: P.S. Szczepaniak, P.J.G. Lisboa, J. Kacprzyk, (eds), Fuzzy Systems in Medicine, Physica Verlag (2000) 519-542

22. Kasabov, N. and Kozma, R. *Multi-scale analysis of time series based on neuro-fuzzy-chaos methodology applied to financial data*. in: A. Refenes, A. Burges, and B. Moody, (eds) Computational Finance 1997, Kluwer Academic (1999), ISBN 0-7923-8308-7

7

23. Kasabov, N., Israel, S., and Woodford, B.J., *Methodology and evolving connectionist architecture for image pattern recognition,* in: Pal, Ghosh and Kundu (eds) Soft Computing and Image Processing, Heidelberg, Physica-Verlag (Springer Verlag) (1999), 318-336

24. Kasabov, N. *Evolving connectionist and fuzzy connectionist systems – theory and applications for adaptive, on-line intelligent systems,* in: Neuro-Fuzzy Techniques for Intelligent Information Systems, N. Kasabov and R.Kozma, (eds) Heidelberg, Physica Verlag (1999) 111-146

25. Kasabov, N., Kozma, R., Kilgour, R., Laws, M., Taylor, J., Watts, M., and Gray, A. *Hybrid connectionist-based methods and systems for speech data analysis and phoneme-based speech recognition.* in: Neuro-Fuzzy Techniques for Intelligent Information Systems, N. Kasabov and R. Kozma, (eds) Heidelberg, Physica Verlag (1999) 241-264

26. Watts, M., and Kasabov, N., *Neuro-genetic tools and techniques,* in: Neuro-Fuzzy Techniques for Intelligent Information Systems. N. Kasabov and R. Kozma, (eds) Heidelberg, Physica Verlag (1999) 97-110

27. Kasabov, N., *Evolving connectionist and fuzzy connectionist systems for on-line adaptive decision making and control,* in: Advances in Soft Computing - Engineering Design and Manufacturing, R. Roy, T. Furuhashi and P.K. Chawdhry (eds.) Springer-Verlag, London Limited, 1999 [ISBN 1-85233-062-7] 638 pages

~ 28. Kozma, R. and Kasabov, N., *Generic neuro-fuzzy-chaos methodologies and techniques for intelligent time-series analysis.* in: Soft Computing in Financial Engineering, R. Ribeiro, R.Yager, H. J. Zimmermann and J. Kacprzyk (eds) Heidelberg, Physica-Verlag (1999)

29. Kasabov, N., *Advanced Neuro-Fuzzy Engineering for Building Intelligent Adaptive Information Systems.* in: Fuzzy Systems Design: Social and Engineering Applications. L.Reznik, V.Dimitrov and J.Kacprzyk (eds) Heidelberg, Physica-Verlag (1998) 249-262

30. Kasabov, N. *A framework for intelligent conscious machines and its application to multilingual speech recognition systems.* in: Brain-like computing and intelligent information systems. S. Amari and N. Kasabov (eds) Singapore, Springer Verlag (1998) 106-126

31. Kozma, R. and Kasabov, N., *Chaos and fractal analysis of irregular time series embedded into connectionist structure.* in: Brain-like computing and intelligent information systems. S. Amari and N. Kasabov (eds) Singapore, Springer Verlag (1998) 213-237

32. Kasabov, N., Kozma, R. Neuro-fuzzy-chaos engineering for building intelligent adaptive information systems. In: *Intelligent Systems: Fuzzy Logic, Neural Networks and Genetic Algorithms.* Da Ruan ed., Boston/London/Dordrecht, Kluwer Academic Publishers (1997) 213-237

33. Kasabov, N. and Clarke, G. *A template-based implementation of connectionist knowledge based systems for classification and learning.* in: Advances in Neural Networks, Vol.3. O. Omidvar (ed) New Jersey, Ablex Publishing Company (1995) 137-156

34. Kasabov, N., *Building comprehensive AI and the task of speech recognition,* in: Applications of Neural Networks to Telecommunications, 2. J. Alspector, R. Goodman and T. Brown (eds) New Jersey, Laurence Erlbaum (1995) 178-187

35. Kasabov, N., and Nikovski, D. *Prognostic expert systems on a hybrid connectionist environment,* in: Artificial Intelligence V Methodology, Systems, Applications, B. du Boulay and V.Sgurev (eds) Amsterdam, North Holland (1992) 141-148

36. Kasabov N., *Hybrid connectionist rule based systems,* in: Artificial Intelligence IV Methodology, Systems, Applications, P. Jorrand and V. Sgurev (eds) Amsterdam, North-Holland (1990) 227-235

37. Kasabov, N, and Demirev, G., *Neural networks and genetic algorithms,* in: Izkustven Intelect, I. Popchev and L. Dakovski (eds) Sofia, Technika (1990) 200-210 (in Bulgarian)

38. Stankulova, B., Dakovski, L., Pavlov, R and Kasabov, N. *Intelligent tutoring systems,* in: Izkustven Intelect, I. Popchev and L. Dakovski (eds), Sofia, Technika (1990) 281-290 (in Bulgarian)

(c) Refereed Journal Articles

1. N.Kasabov, Integrative Connectionist Learning Systems Inspired by Nature: Current Models, Future Trends and Challenges, Natural Computing, Int. Journal, Springer, to appear 2008,

2. S.Pang, N.Kasabov, Encoding and Decoding the Knowledge of Association Rules over SVM Classification Trees, Knowledge and Information Systems - Int. Journal, Springer, to appear 2008

3. S.Wysoski, L.Benuskova, N.Kasabov, Fast and Adaptive Network of Spiking Neurons for Multi-view Visual Pattern Recognition, Neurocomputing, Elsevier, 2008, to appear

4. Kasabov, N., V.Jain, L.Benuskova. *Integrating brain-gene ontology with evolving connectionist system for modelling and discovery*, Neural Networks, 21 (2008), 266-275

5. M. Defoin-Platel, S.Schliebs, N.Kasabov, Quantum-inspired Evolutionary Algorithm: A multi-model EDA, IEEE Trans. Evolutionary Computation, 2008 to appear

6. Zeke S. H. Chan, Ilkka Havukkala, Vishal Jain, Yingjie Hu and Nikola Kasabov, *Soft Computing Methods to predict Gene Regulatory Networks: An Integrative approach on Time-Series Gene Expression Data, Applied Soft Computing, Volume 8, Issue 3*, June 2008, Pages 1189-1199

7. S Ozawa, S Pang and N Kasabov, *Incremental Learning of Chunk Data for On-line Pattern Classification Systems*, IEEE Transactions of Neural Networks, April 2008

8. Kasabov, N., *Global, local and personalised modelling and profile discovery in Bioinformatics: An integrated approach*, Pattern Recognition Letters, Vol. 28, Issue 6 , April 2007, 673-685

9. Chan Zeke S.H., Lesley Collins and N. Kasabov *Bayesian learning of sparse gene regulatory networks*, Biosystems, Volume 87, Issues 2-3, February 2007, Pages 299-306

10. Huang, L., Q.Song and N.Kasabov. Evolving connectionist system based role allocation for robotic soccer, Int. J. Advanced Robotic Systems, Vol. 5, Number 1, March 2008, 59-62

11. Kasabov, Nikola, Jain, Vishal, Gottgtroy, Paulo C. M., Benuskova, Lubica & Joseph, Frances (2007). Brain gene ontology and simulation system (BGOS) for a better understanding of the brain. Cybernetics and Systems, June 2007, Vol. 38 (5), pp 495-508

12. Benuskova L, Kasabov N, *Modeling L-LTP based on changes in concentration of pCREB transcription factor*, Neurocomputing, Volume 70, Issues 10-12, June 2007, Pages 2035-2040, ISSN: 0925-2312, 2007

13. S.Pang, I.Havukkala, Y.Hu, N.Kasabov, Classification consistency analysis for bootstrapping gene selection, Neural Computing & Applications, Springer, Volume 16, Number 6, p.p.527-539, 2007

14. Zeke S.H. Chan, H.W. Ngan, A.B. Rad, A.K. David and N. Kasabov *Short-term ANN load forecasting from limited data using generalization learning strategies*, Neurocomputing, Volume 70, Issues 1-3, December 2006, Pages 409-419

15. Song, Q. and Kasabov, N. *TWNFI- a transductive neuro-fuzzy inference system with weighted data normalisation for personalised modelling*, Neural Networks, Vol.19, Issue 10, Dec. 2006, pp. 1591-1596

16. Benuskova L, Jain V, Wysoski SG and Kasabov N, Computational neurogenetic modeling: a pathway to new discoveries in genetic neuroscience. Intl. Journal of Neural Systems, 16(3): 215-227, 2006.

17. Gevrey, M., Sue Worner, Nikola Kasabov, Joel Pitta and Jean-Luc Giraudel, *Estimating Risk of Events Using SOM Models: A Case Study on invasive species establishment, Ecological Modelling*, 197, 2006, 361-372

18. Kasabov, N. *Adaptation and Interaction in Dynamical Systems: Modelling and Rule Discovery Through Evolving Connectionist Systems*, Applied Soft Computing, 2006, Volume 6, Issue 3, pages 307-322.

19. Song, Q. , N. Kasabov, T. Ma, M. Marshall, *Integrating regression formulas and kernel functions into locally adaptive knowledge-based neural networks: a case study on renal function evaluation*, Artificial Intelligence in Medicine, 2006, Volume 36, pp 235-244

20. Ozawa, S., S. Pang and N. Kasabov, Online Feature Selection for Adaptive Evolving Connectionist Systems, International Journal of Innovative Computing, Information and Control, Volume 2, No. 1, 2006 pp181-192

21. Ozawa, S., Shaoning Pang and Nikola Kasabov, Incremental learning of feature space and classifier for on-line pattern recognition, International Journal of Knowledge based and Intelligent Engineering Systems, Volume 10, 2006, pp 57-65

22. Chan, Z., Lesley Collins, N.Kasabov, *An Efficient Greedy K-means Algorithm for Global Gene Trajectory clustering*, Expert Systems with Applications: An International Journal. *Volume 30, Issue 1, January 2006, Pages* 137-141.

23. Chan, Z.,N.Kasabov, Lesley Collins, *A Two-Stage Methodology for Gene Regulatory Network Extraction from Time-Course Gene Expression Data,* Expert Systems with Applications: An International Journal, *Volume 30, Issue 1, January 2006, Pages 59-63.*

24. Tsankova, D., Georgieva, V., Kasabov, N., *Artificial Immune Networks as a Paradigm for Classification and Profiling of Gene Expression Data*, Journal of Computational and Theoretical Nanoscience, Volume 2, Number 4, December 2005, pp. 543-550(8)

25. Kasabov, N , I.A. Sidorov, D S Dimitrov, *Computational Intelligence, Bioinformatics and Computational Biology: A Brief Overview of Methods, Problems and Perspectives*, Journal of Computational and Theoretical Nanoscience, Vol. 2 No. 4, pp 473-491, 2005

26. Kasabov N and Boeva V (2005) Bioinformatics: Challenges and opportunities for information science and knowledge engineering, *Information Technologies and Control*, No.4, 11-18

27. Havukkala I, Pang S, Jain V, Kasabov N, *Classifying MicroRNAs by Gabor Filter Features from 2D Structure Bitmap Images on a Case Study of Human microRNAs*, Journal of Theoretical and Computational Nanoscience, Volume 2, No. 4, ppp 506-513, 2005

28. Kasabov, N., Lubica Benuskova, and Simei Gomes Wysoski, *Biologically Plausible Computational Neurogenetic Models: Modeling the Interaction Between Genes, Neurons and Neural Networks*, Journal of Computational and Theoretical Nanoscience, Volume 2, Number 4, December 2005, pp. 569-573(5) ISSN: 1546-1963

29. Chan S.H., Kasabov N., *Fast Neural Network Ensemble Learning via Negative-Correlation Data Correction*, IEEE Transaction on Neural Networks 2005, Volume 16, Issue 6, pp 1707-1710

30. Pang, S., S. Ozawa and N. Kasabov, *Incremental Linear Discriminant Analysis for Classification of Data Streams*, IEEE Trans. SMC-B, vol. 35, No. 5, 2005, 905 – 914

31. Goh, L, N.Kasabov, *An integrated feature selection and classification method to select minimum number of variables on the case study of gene expression data*, J. of Bioinformatics and Computational Biology, Imperial College Press and World Sci. Publ., vol.3, N. 5, pp 1107-1136, 2005

32. Song Q. and N. Kasabov, *NFI: A Neuro-Fuzzy Inference Method for Transductive Reasoning*, IEEE Transactions on Fuzzy Systems, Volume 13, Issue 6, pp 799-808, 2005.

33. Chan, Z. and N.Kasabov, *A Preliminary Study on Negative Correlation Learning via Correlation-Corrected Data (NCCD)*, Neural Processing Letters, Springer, Volume 21, Issue 3, pp, 207-214, 2005

34. Ozawa, S., S.Too, S.Abe, S. Pang and N. Kasabov, *Incremental Learning of Feature Space and Classifier for Online Face Recognition*, Neural Networks, August, 2005, pp 575-584

35. Marshall, M.R. , Q. Song, T.M. Ma, S. MacDonell, N.Kasabov, *Evolving Connectionist System versus Algebraic Formulae for Prediction of Renal Function from Serum Creatinine*, Kidney International, vol. 67 (2005), pp. 1944 – 1954

36. Chan, S. Z. , N.Kasabov and L.Collins, *A hybrid genetic algorithm and expectation maximization method for global gene trajectory clustering*, Journal of Bioinformatics and Computational Biology, Imperial College Press and World Scie. Publ., vol.3 No.5, pp 1227-1242, 2005

37. Kasabov, N. *Knowledge based neural networks for gene expression data analysis, modelling and profile discovery*, Drug Discovery Today: BIOSILICO, vol. 2, No. 6, November 2004, pp. 253-261.

38. Chan S. and N.Kasabov, *Efficient global clustering using the greedy elimination method*, Electronic Letters, vol. 40, No. 25, 1611 - 1612, 2004,

39. Kasabov N. and S. Pang, *Transductive Support Vector Machines and Applications in Bioinformatics for Promoter Recognition*, Neural Information Processing - Letters and Reviews 3(2), KAIST Press, pp.31-38., 2004

40. Kasabov N. and L. Benuskova, *Computational Neurogenetics*, International Journal of Theoretical and Computational Nanoscience, Vol. 1 (1) American Scientific Publisher, 2004, 47-61.

41. Chan Z.and N.Kasabov, *Evolutionary computation for on-line and off-line parameter tuning of evolving fuzzy neural networks*, Int. J. of Computational Intelligence and Applications, Imperial College Press, vol. 4, N.3, September 2004, 309-319

42. Futschik, M. , M. Sullivan, A. Reeve, N. Kasabov, *Prediction of clinical behaviour and treatment of cancers*, Applied Bioinformatics, vol.3, 2003, 553-558

43. Cohen, T., D.Hegg, Mde Michele, Q.Song, and N. Kasabov, *An intelligent controller for automated operation of sequencing batch reactors*, Water Science & Technology, IWA Publishing, Vol 47, No 12 (2003) 57–63

44. Futschik, M., A.Reeve, and Kasabov, N. *Evolving connectionist systems for knowledge discovery from gene expression data of cancer tissue*, Artificial Intelligence in Medicine, 28 (2003) 165-189

45. Kasabov, N. , *Spoken Language Analysis, Modeling And Recognition – Statistical And Adaptive Connectionist Approaches*, Preface to a Special Issue of Information Sciences 2003, Volume 156 Numbers 1-2

46. Laws, M., R. Kilgour and N. Kasabov, *Modelling the emergence of bilingual acoustic clusters: a preliminary case study,* Information Sciences, 156 (2003) 85-107

47. Abdulla W., and N. Kasabov. *Reduced feature-set based parallel CHMM speech recognition systems.* Information Sciences. 156 (2003) 23-38

48. Ghobakhlou A., M. Watts and N. Kasabov. *Adaptive speech recognition with evolving connectionist systems,* Information Sciences, 156 (2003) 71-83

49. Rizzi., L. , Flavio Bazzana. Nikola Kasabov, Mario Fedrizzi and Luca Erzegovesi (2003). *Simulation of ECB decisions and forecast of short term Euro rate with an adaptive fuzzy expert system.* European Journal of Operational Research. 145 (2003) 363-381

50. Deng, D., N. Kasabov, *On-line pattern analysis by evolving self-organising* maps, Neurocomputing , Volume 51, April (2003) 87-103

51. Futschik, M., A.Jeffs, S.Pattison, N.Kasabov, M.Sullivan, A.Merrie, A.Reeve, *Gene expression profiling of metastatic and non-metastatic colorectal cancer cell-lines,* Genome Letters, vol.1, No.1 (2002) 1-9

52. Kasabov, N., *Evolving Fuzzy Neural Networks for Supervised/Unsupervised On-Line. Knowledge-Based Learning,* IEEE Transactions on Systems, Man and Cybernetics, Part B: Cybernetics, Vol. 31, No. 6, December (2001) 902-918.

53. Kasabov, N., *Artificial Neural Networks for Intelligent Information Processing,* Transactions of Chemical Engineering, London. June 2001, 27-28

54. Kasabov, N., and Song, Q., DENFIS: *Dynamic Evolving Neural-Fuzzy Inference System and its Application for Time Series Prediction,* IEEE Transactions on Fuzzy Systems, Vol. 10, 2, April, (2002) 144-154

55. Kasabov, N. On-line learning, reasoning, rule extraction and aggregation in locally optimised evolving fuzzy neural networks, *Neurocomputing,* 41 (2001) 25-41

56. Kim, J., A. Mowat, P. Poole, and N. Kasabov, *Linear and non-linear pattern recognition models for classification of fruit from visible-near infrared spectra,* Chemometrics and intelligent laboratory systems, 51 (2000) 201-216

57. Kasabov, N., Israel, S., and Woodford, B.J., *Hybrid evolving connectionist systems for image classification,* Journal of Advanced Computational Intelligence, vol.4, 1, (2000) 57-65

58. Kasabov, N., Postma, E. and van den Herik, J. *AVIS: a connectionist-based framework for integrated auditory and visual information processing,* Information Sciences, vol. 123, (2000) 127-148

59. Kasabov, N., and Kozma, R., *Methods and systems for intelligent human computer interaction – Editorial.* Information Sciences, vol. 123 (2000) 1-2

60. Brown, C., Jacobs, G., M.Schreiber, J.Magnum, J.McNaughton, M.Cambray, M.Futschik, L.Major, O.Rackham, W.tate, P.Stockwell, C.Thompson, and N.Kasabov, *Using bioinformatics to investigate post-trascriptional control of gene expression,* NZ Bio Science, vol. 7, 4 (2000)11-12

61. Kim, J.S. and Kasabov, N. *HyFIS: adaptive neuro-fuzzy systems and their application to non-linear dynamical systems,* Neural Networks, vol. 12, 9 (1999) 1301-1319

62. Kasabov, N., Kilgour, R. and Sinclair, S. *From hybrid adjustable neuro-fuzzy systems to adaptive connectionist-based systems for phoneme and word recognition.* Fuzzy Sets and Systems, vol.130, 2 (1999) 349-367

63. Purvis, M., Kasabov, N., Benwell. G., Zhou, Q., and Zhang, F. *Neuro-fuzzy methods for Environmental Modelling,* System Research and Information Systems, vol.8, 4 (1999) 221-239

64. Kasabov, N. *Evolving fuzzy neural networks: Theory and Applications for on-line adaptive prediction, decision making and control,* Australian Journal of Intelligent Information Processing Systems, vol.5, 3 (1998) 154-160

65. Kasabov, N. *Connectionist-based information systems: Methods and applications* (Guest editorial), Australian Journal of Intelligent Information Processing Systems, vol.5, 3 (1998) 153

66. Kasabov, N., Kim, J.S. and Kozma, R. A *Fuzzy neural network for knowledge acquisition in complex time series,* International Journal of Control and Cybernetics, vol.4, 27 (1998) 594-611

67. Kasabov, N. *The ECOS framework and the 'eco' training method for evolving connectionist systems.* Journal of Advanced Computational Intelligence vol.2, No.6, (1998) 195-202

68. Kasabov, N. and Kozma. R. *Self-organisation and adaptation in intelligent systems – preface,* Journal of Advanced Computational Intelligence vol.2, No.6, (1998) 177

69. Kasabov, N. and Kozma, R. *Hybrid intelligent adaptive systems: a framework and a case study on speech recognition.* International Journal of Intelligent Systems vol.13, 6 (1998) 455-466

70. Kasabov, N. and Kozma, R. *Introduction: Hybrid intelligent adaptive systems.* International Journal of Intelligent Systems vol.13, 6 (1998) 453-454

71. Kozma, R., Kasabov, N., Kim, J. and Cohen, T. *Integration of connectionist methods and chaotic time series analysis for the prediction of environmental process data.* International Journal of Intelligent Systems vol.13, 6 (1998) 520-538

72. Kasabov, N. *Fuzzy neural networks, rules extraction and fuzzy synergistic reasoning.* Systems Research and Information Systems 8, 45-59 (1998)

73. Israel, S. and Kasabov, N. *Statistical, connectionist and fuzzy inference techniques for image classification.* Journal of Electronic Imaging 6 (3):1-11 (1997)

74. Kasabov, N.. Kim, JS. Watts, M. and Gray, A. *FuNN/2 - A fuzzy neural network architecture for adaptive learning and knowledge acquisition.* Information Sciences 101(3-4): 155-175 (1997)

75. Kasabov, N. and Hirota, K. *Special issue on advanced neuro-fuzzy techniques and their applications: introduction.* Information Sciences *101*(3-4): *153-154* (1997)

76. Kasabov, N. *Learning strategies for modular neuro-fuzzy systems: a case study on phoneme-based speech recognition.* Journal of Intelligent & Fuzzy Systems 5, 345-354 (1997)

77. Cohen, T. and Kasabov, N. *Application of computational intelligence for on-line control of a Sequencing Batch Reactor (SBR) at Morrinsville Sewage Treatment Plant* Water Science Technology, vol.35, No.10, 63-73 (1997)

78. Kasabov, N. *Adaptable connectionist production systems.* Neurocomputing 13(2-4):95-117 (1996)

79. Kasabov, N. *Fril - fuzzy and evidential reasoning in artificial intelligence (a book review).* Journal of the American Society for Information Science. 47 (10):790-791 (1996)

80. Kasabov, N. *Learning fuzzy rules and approximate reasoning in fuzzy neural networks and hybrid systems.* Fuzzy Sets and Systems 82(2):2-20 (1996)

81. Kasabov, N., Purvis, M., Zhang, F., and Benwell, G. *Neuro-fuzzy engineering for spatial information processing.* Australian Journal of Intelligent Information Processing Systems 3(2): 35-44 (1996)

82. Israel, S. and Kasabov, N. *Improved learning strategies for multimodular fuzzy neural network systems: A case study on image classification.* Australian Journal of Intelligent Information Processing Systems 3(2): 62-70 (1996)

83. Kasabov, N., Lavington S., Li S. and Wang C. *A model for exploiting parallel associative matching in AI production systems.* Knowledge-Based Systems 8 (1): 1-7 (1995)

84. Kasabov, N. *Hybrid connectionist fuzzy systems for speech recognition.* Lecture Notes in Computer Science/ Artificial Intelligence 1011:19-33 (1995)

85. Kasabov, N. *Hybrid Connectionist Fuzzy Production Systems - Towards Building Comprehensive AI.* Intelligent Automation and Soft Computing 1(4): 351-360 (1995)

86. Kasabov, N. *Connectionist fuzzy production systems.* Lecture Notes in Computer Science/ Artificial Intelligence 847:114-128 (1994)

87. Kasabov, N. *Hybrid connectionist production systems.* Journal of Systems Engineering 3(1): 15-21 (1993)

88. Kasabov, N. and Shishkov, S. *A connectionist production system with partial match and its use for approximate reasoning.* Connection Science 5(3/4): 275-305 (1993)

89. Kasabov, N. *Incorporating neural networks into production systems and a practical approach towards the realisation of fuzzy expert systems.* Computer Science and Informatics 21(2): 26-34 (1991)

90. Kasabov, N. *Neural networks and genetic algorithms.* Avtomatika i Informatika, 8/9:51-60 (1990) (in Bulgarian)

91. Kasabov, N. and Nikolaev, N. *Parallel production systems.* Avtomatika i Informatika, 7:37-45 (1990) (in Bulgarian)

92. Kasabov, N. *Functionally reconfigurable general purpose parallel machines and some image processing and pattern recognition applications.* Pattern Recognition Letters, 3:215-223 (1985)

93. Kasabov, N. *A method for SIMD/MIMD functionally reconfigurable multi-microprocessor system design and parallel data exchange algorithms.* Parallel Computing, 2:73-78 (1985)

94. Kasabov, N. *A general approach to parallel processing in homogeneous multi-register, multi-processor and commutation structures.* Computers and Artificial Intelligence 2(4): 349-359 (1983)

95. Kasabov, N. *A multi- microprocessor system with a functional reconfiguration and parallel computations.* Avtomatika i Ischislitelna Technika, 1:38-46 (1983) (in Bulgarian)

96. Karaivanova, M., *Kasabov, N. and Hristov I. Predicting the scope of effect of anti-cancer medicines.* Experimentalnaja Oncologija 5(1): 51-54 (1983) (in Russian)

97. Kasabov, N. *Register commutation structures and algorithms for data exchange in multi-microprocessor systems.* Avtomatika i Ischilitelna Technika, 5:17-24 (1983) (in Bulgarian)

98. Karaivanova, M., and Kasabov. N. *Experimental Tumours as Prognostic Systems for Determining the Antitumour effect.* Comptes rendus de l'Academie Bulgare des Sciences 35(11): 1595 –1598 (1983)

99. Kasabov, N., Bidjev, G. and Jechev, B. *Hierarchical discrete systems and the realisation of parallel algorithms.* Lecture Notes in Computer Science, 111:415-422 (1981)

100. Karaivanova, M. and Kasabov. N. *On the selection of tumour models for the screening of anti-tumour substances (AS).* Comptes rendus de l'Academie Bulgare des Sciences 34(2): 299-302 (1981)

101. Kasabov, N., *Method and algorithm for permutation of data records,* Systemi i Upravlenie, Bulgaria, 1: 39 – 43 (1981) (in Bulgarian)

102. Kasabov, N. and Bidjev, G. *Minimal representation of the symmetrical group close to the compact one.* Cybernetika, (translated in English as "Cybernetics"), 3:135-136 (1980) (in Russian)

103. Kasabov, N., and Dakovski, L. *Program and algorithm for the generation of algebraic transformations.* Systemi i Upravlenie, 4: 25-28 (1979) (in Bulgarian)

104. Kasabov. N. *Generating the symmetrical semi-group and the symmetrical group by using generating systems with excess,* University Annual Applied Mathematics XIV(1):35-42 (1978) Sofia (in Bulgarian)

105. Bidjev. G. and Kasabov, N. *On effective representations of classes of transformations and their finite automata interpretation.* University Annual Applied Mathematics XIV(1):57-62 (1978) Sofia (in Bulgarian)

106. Kasabov. N. *On the problem of generating the symmetrical group.* University Annual Applied Mathematics X (3): 55-59 (1974) Sofia (in Bulgarian)

(d) Non-refereed Journal Articles

Dakovski, L., and Kasabov, N. *An approach to coding of Moor automata.* International Symposium "Applied aspects of the automata theory (1975), Bulgaria

(e)   Major Reviews

1. Kasabov, N., Connectionist-based information systems, Report on a FRST funded project UOO606, University of Otago (1998) 600pages

2. Kasabov, N. and Watson, C. *Automatic Speech Recognition: methods, Tools and Their Application for Communication and Intelligent Information Systems,* Report for TELECOM NZ, Department of Information Science, University of Otago, 1994, 100 p

3. Kasabov, N. *Connectionist knowledge based expert systems.* in: Connectionism & AI. P.Braspenning, J.Taylor, P.Gallinary and N.Kasabov (eds) Lecture Notes of the Summer School "ISAI'90", Albena, Bulgaria (1990) 364-402

4. Andriesen, H. and Kasabov, N. *Interconnection Strategies for Tightly Coupled Multi-processor Systems,* Technical Report 85-10, Department of Mathematics and Informatics, Delft University of Technology, The Netherlands (1984) 20p

(f)   Publications in Refereed Conference Proceedings

Edited Conference Proceedings:

1. J.Si. R.Sun, D.Brown, I.King and N.Kasabov (eds) Proceedings of the Int Joint Conference on Neural Networks – IJCNN, 12-16 August 2007, IEEE Press, 2007

2. A.Koenig, M.Koeppen. A.Abraham, C.Igel and N.Kasabov, Proc. Seventh Int. Conference on Hybrid Intelligent Systems – HIS 2007, 17-19 Sept.2007, IEEE Comp.Soc.Press

3. P.Angelov, D.Filev, N.Kasabov, O.Cordon (eds) Proc. 2006 Int. Symp. Evolving Fuzzy Systems, Lancaster, UK, IEEE Press, 2006

4. N. Pal, Nikola Kasabov et al, (eds) Proc. of the Int. Conf. on Neuro Information Processing, Calcutta, November 2004, Springer Verlag, Vol. 3316, ICONIP'2004, Heidelberg, 2004

5. M.Barley, N.Kasabov (eds) Intelligent Multi-agent Systems, LNAI, vol. , 2004
6. Kasabov N., Pang S., (eds) International Journal of Computers, Systems and Signals, Volume 5 No. 2, 2004
7. K. Chen, Shu Heng Chen, Heng Da Cheng, David K.Y. Chiu, Sanjoy Das, Richard Duro, Zhen Jiang, Nik Kasabov, Etiene Kerre, Hong Va Leong, Qing Li,, Mi Lu, Manuel Grana Romay, Don Ventura, Paul P. Wang, Jie Wu (eds) Proceedings of the 7th Joint Conference on Information Sciences, JCIS 2003, 1780 pages
8. Kasabov, N, Zeke S.H. Chan (eds) Proceedings of the Conference on Neuro-Computing and Evolving Intelligence, November 2003, Auckland University of Technology, (2003) 122 pages
9. Kasabov, N. Proceedings of the Neurocomputing Colloquium and Workshop, October, Auckland University of Technology, (2002) 85 pages
10. Kasabov, N., B.Woodford (eds) Proceedings of the ANNES'2001, University of Otago (2001) 150 pages
11. Gedeon, T., P.Wong, S.Halgamuge, N.Kasabov, D.Nauck, and K.Fukushima (eds) *ICONIP'99*- Proceedings of the 6th International Conference on Neural Information Processing, 16-20 November 1999, Perth, IEEE Press (1999), Vol. I & II, 842 pages
12. Kasabov, N., and K.Ko, (eds) *Emerging Knowledge Engineering and Connectionist-based Information Systems.* Proceedings of the ICONIP/ANZIIS/ANNES'99 Workshop "Future directions for intelligent systems and information sciences, Dunedin, 22-23 Nov.1999, University of Otago (1999)
13. Kasabov, N., Kozma, R., O'Shea, R., Ko, K., Coghill, G., and Gedeon, T., (eds) *Advances in Connectionist-Based Information Systems.* Proceedings of the International Conference on Neural Information Processing ICONIP'97, Springer Verlag Singapore (1998), 1550 pages
14. Kasabov, N. and Coghill, G. (eds) Proceedings of the *Second New Zealand International Conference on Artificial Neural Networks and Expert Systems, ANNES'95,* Dunedin, IEEE Computer Society Press, Los Alamitos (1995) 401 pages
15. Kasabov, N. (ed.) *The First New Zealand International Conference on Artificial Neural Networks and Expert Systems,* Proceedings of ANNES'93 Dunedin, IEEE Computer Society Press (1993) 346 pages

Papers published in peer reviewed conference proceedings:

1. Y Hu. N Kasabov. Ontology-Based Framework for Personalized Diagnosis and Prognosis of Cancer Based on Gene Expression Data, ICONIP2007, Japan, 13-16 November 2007, LNCS, Part II, 4985, pp. 846-855, Springer, 2008
2. Boris Bacic, Nikola Kasabov, Stephen MacDonell, Shaoning Pang, Evolving Connectionist Systems for Adaptive Sport Coaching, ICONIP2007, Japan, 13-16 November 2007, LNCS, Part II, pp.416-425, Springer, 2008
3. Seiichi Ozawa, Shaoning Pang, Nikola Kasabov, Adaptive Face Recognition System Using Fast Incremental Principal Component Analysis, ICONIP2007, Japan, 13-16 November 2007, LNCS, Part II, 4985, pp.396-405, Springer, 2008
4. Simei Gomes Wysoski, Lubica Benuskova, Nikola Kasabov, Adaptive Spiking Neural Networks for Audiovisual Pattern Recognition, ICONIP2007, Japan, 13-16 November 2007, LNCS, , Part II, pp.406-415 Springer, 2007
5. S Noki, S.Pang, N.Kasabov and T.Yamakawa, Curiosity driven on-line learning, Proc. ICONIP2007, Japan, 13-16 November 2007, LNCS, Springer, 2007
6. S Wysoski, L Benuskova, N Kasabov, Text-independent Speaker Authentication with Spiking Neural Networks, Proc. ICANN 2007, LNCS, Springer, 2007
7. M.Defoin-Platel, S.Schliebs, N.Kasabov, A versatile quantum inspired evolutionary algorithm, Proc. IEEE Congress on Evolutionary Computation, IEEE Press, 2007.
8. N Kasabov, VJain, P Gottgtroy, L Benuskova, S Wysoski, Evolving Brain-Gene Ontology System (EBGOS): towards Integrating Bioinformatics and Neuroinformatics Data to facilitate Discoveries, Frances Joseph International Joint Conference on Neural Networks, IJCNN, 2007, Orlando, IEEE Press, 2007
9. Kasabov, N., Brain-, gene-, and quantum inspired computational intelligence: Challenges and opportunities, in: B.Reusch (ed) Computational Intelligence, Theory and Practice, Advances in Soft Computing, Springer, 521-544, 2006

10. Kasabov, N., Neuro-, genetic-, and quantum inspired evolving intelligent systems, Proc. 2006 Int. Symposium on Evolving Fuzzy Systems, September 2006, UK, IEEE Press, 63-73, 2006

11. Kasabov, N., Filev, D., Evolving intelligent systems, Proc. 2006 Int. Symposium on Evolving Fuzzy Systems, September 2006, Lake District, UK, IEEE Press, 8-18, 2006

12. L. Benuskova, S. Wysoski, and N. Kasabov, Computational neuro-genetic modelling: A methodology to study gene interactions underlying neural oscillations, Proc. IJCNN 2006, IEEE Press, 2006,

13. Pang, Shaoning, Ilkka Havukkala, Nikola Kasabov, *Two-Class SVM Trees (2-SVMT) for Biomarker Data Analysis*, Lecture Notes in Computer Science, Volume 3973/2006, pp 629-634

14. Pang, Shaoning, Nikola Kasabov, *Investigating LLE Eigenface on Pose and Face Identification*, Lecture Notes in Computer Science, Volume 3972/2006 pp 134-139

15. Wysoski, S. L. Benuskova and N. Kasabov (2006) On-line learning with structural adaptation in a network of spiking neurons for visual pattern recognition, in: Artificial Neural Networks - ICANN 2006, LNCS 4131, 61-70

16. Qun Song, Tian Min Ma and Nikola Kasabov, *TTLSC – Transductive Total Least Square Model for Classification and Its Application in Medicine, Advanced Data Mining and Applications*, Lecture Notes in Computer Science, Volume 4093, Pages 197-204, 2006

17. Ilkka Havukkala, Lubica Benuskova, Shaoning Pang, Vishal Jain, Rene Kroon and Nikola Kasabov, *Image and Fractal Information Processing for Large-Scale Chemoinformatics, Genomics Analyses and Pattern Discovery*, Pattern Recognition in Bioinformatics, Lecture Notes in Computer Science, Volume 4146/2006, Pages 163-173, 2006

18. Song Q, Ma T, Kasabov N, Transductive Knowledge Based Fuzzy Inference System For Personalised Modeling, IFSA 2005, Beijing, pp 1097-1100

19. Chan, S. H. , Collins, L. , Kasabov, N. Bayesian Inference of Sparse Gene Network, In: Proc. The Sixth International Workshop on Information Processing in Cells and Tissues, St William's College, York, United Kingdom, August 30 - September 1, 2005, pp. 333 – 347

20. Pang, S. , Seiichi Ozawa, Nikola Kasabov, *Chunk Incremental LDA Computing on Data Streams*, Lecture Notes in Computer Science, Volume 3497, Jan 2005, pp.51-56

21. Chan, S. H. , Collins, L. , Kasabov, N. Global K Means Clustering of Gene Expression Data using the Greedy Elimination Method, In: Proc. The Sixth International Workshop on Information Processing in Cells and Tissues, St William's College, York, United Kingdom, August 30 - September 1, 2005 pp 405-415

22. Chan, S. H. , Kasabov, N. Global EM Learning of Finite Mixture Models using the Greedy Elimination Method, In: Proc. The twenty-fifth Annual International Conference of the British Computer Society's Specialist Group on Artificial Intelligence, Peterhouse College, Cambridge, UK, 12th-14th December 2005

23. Chan, S. H. , Kasabov, N. Fast Estimation of Distribution Algorithm (EDA) via Constrained Multi-Parent Recombination, In: Proc. The twenty-fifth Annual International Conference of the British Computer Society's Specialist Group on Artificial Intelligence, Peterhouse College, Cambridge, UK, 12th-14th December 2005

24. Kasabov, N. . L. Benuskova L and Wysoski SG (2005) *Computational neurogenetic modeling: integration of spiking neural networks, gene networks, and signal processing techniques*. In: ICANN 2005, LNCS 3697, W. Duch et al (Eds), Springer-Verlag, Berlin Heidelberg, pp. 509-514.

25. T. Ma, Q Song, M.R. Marshall, N Kasabov, TWNFC-Transductive Neural-Fuzzy Classifier with Weighted Data Normalization and Its Application in Medicine, CIMCA 2005, Austria

26. Q. Song, T.M. Ma, N.Kasabov, *Transductive Knowledge Based Fuzzy Inference System for Personalized Modelling*, L.Wang and Y.Lin (eds): FSKD 2005, LNAI 3614, Springer-Verlag, Berlin- Heidelberg, 2005, pp. 528 – 535.

27. N. Kasabov, Global, Local and Personalised Modeling and Pattern Discovery in Bioinformatics: An Integrated Approach, Proc. IEEE Int. Workshop on Soft Computing Applications - SOFA, 27-30.08.2005, Szeged-Arad, 2005, pp.56-67

28. Kasabov, N., L.Benuskova, S.Wysoski. A Computational Neurogenetic Model of a Spiking Neuron, IJCNN 2005 Conf. Proc., IEEE Press, 2005, Volume 1, pp 446-451

29. Mohan, N. and N. Kasabov, Transductive Modelling with GA parameter optimisation, IJCNN 2005 Conf. Proceed., IEEE Press, 2005, Volume 2, pp 839-844

30. Huang, L., Song, Q., Kasabov, N., Evolving Connectionist Systems Based Role Allocation of Robots for Soccer Playing, Joint 2005 International Symposium on Intelligent Control & 13th

Mediterranean Conference on Control and Automation (2005 ISIC-MED), June 27-29, 2005, Limassol, Cyprus

31. Angelov, P., N. Kasabov, Evolving Computational Intelligence Systems, In: (R. Alcala et al Eds.) Proc. of the I Workshop on Genetic Fuzzy Systems, Granada, March 17-19, 2005, pp.76-82, ISBN 84-689-1117-8

32. Kasabov, N. D Zhang, P S Pang, Incremental Learning in Autonomous Systems: Evolving Connectionist Systems for On-line Image and Speech Recognition, 2005 IEEE Workshop on Advanced Robotics and its Social Impacts, pp 120-125

33. Pang, S., N Kasabov, Inductive vs. Transductive Inference, Global vs. Local Models: SVM, TSVM and SVMT for Gene Expression , Proc. IEEE , IJCNN 2005

34. Kasabov, N., L.Benuskova, S.Wysoski, Computational Neurogenetic Modelling: Integration of spiking neural networks, gene networks, and signal processing techniques, Proc. IEEE Workshop on Biomedical Applications of Circuits and Systems, Singapore, 1-3 December 2004, IEEE Press

35. Kasabov, N. , Z. S.H. Chan, Igor Sidorov and Dimiter Dimitrov, *Gene Regulatory Network Discovery for Time Series Gene Expression Data – A Computational Intelligence Approach*, Lecture Notes in Computer Science, Vol.3316, 2004, Springer Verlag, 1344-1353.

36. Chan, Z.S., N.Kasabov, and L. Collins, A two-stage methodology for gene regulatory network extraction from time-course gene expression data, Proc. IEEE Workshop on Biomedical Applications of Circuits and Systems, Singapore, 1-3 December 2004, IEEE Press

37. Ozawa. S., Shaoning Pang and Nikola Kasabov *On-line Feature Selection for Adaptive Evolving Connectionist Systems*, Fuzzy Systems & Innovation Computing, Kitakyushu Japan, 2004

38. Zhang. D. N. Kasabov. A. Ghobakhlou *An Adaptive Model of Person Identification Combining Speech and Image Information*, in ICARCV 2004, Kunming, China

39. Gottgtroy P., Kasabov N. and MacDonell S., *An ontology driven approach for knowledge discovery in Biomedicine*, in: Proceedings of the Third Brazilian Symposium on Mathematical and Computational Biology Volume 1, R.Modaini (ed), Brazil, 2004

40. Gottgtroy P., Kasabov N. and MacDonell S., *Building Evolving Ontology Maps for Data Mining and Knowledge Discovery*, in: Proc. Pacific Rim International Conference on Artificial Intelligence, PRICAI, Auckland, August, 2004

41. Song. Q., Tianmin Ma and Nikola Kasabov *LR-KFNN: Logistic Regression-Kernel Function Neural Networks and the GFR-NN Model for Renal Function Evaluation* in International Conference on Computational Intelligence for Modelling, Control & Automation (CIMCA 2004), July 2004, Gold Coast, Australia.

42. Chan Z.S., and N. Kasabov, *Gene Trajectory Clustering with a Hybrid Genetic Algorithm and Expectation Maximization Method*, in: Proc. International Joint Conference on Neural Networks, IJCNN 2004, Budapest, 16-30 June 2004, IEEE Press

43. Pang S. and N. Kasabov, *Inductive vs Transductive Inference, Global vs Local Models: SVM, TSVM, and SVMT for Gene Expression Classification Problems*, in Proc. International Joint Conference on Neural Networks, IJCNN 2004, Budapest, 16-30 June 2004, IEEE Press

44. Q. Song and N. Kasabov, *WDN-RBF: Weighted Data Normalization for Radial Basic Function Type Neural Networks*, in: Proc. International Joint Conference on Neural Networks, IJCNN 2004, Budapest, 16-30 June 2004, IEEE Press

45. N. Kasabov, L. Benuskova and S. G. Wysoski, *Computational Neurogenetic Modelling: Gene Networks within Neural Networks*, in: Proc. International Joint Conference on Neural Networks, IJCNN 2004, Budapest, 16-30 June 2004, IEEE Press

46. L.Goh, Q. Song and N. Kasabov, *A Novel Feature Selection Method to Improve Classification of Gene Expression Data*, in: Proc. Second Asia-Pacific Bioinformatics Conference (APBC 2004), Dunedin, 18-22nd January 2004. Australian Computer Science Communications, Volume 26, Number 4 (161-166)

47. Soltic, S. , S.Pang, N.Kasabov, S. Worner and L.Peacock, *Dynamic Neuro-fuzzy Inference and Statistical Models for Risk Analysis of Pest Insect Establishment*, Lecture Notes of Computer Science, vol. 3316, Springer, 2004, 971-976.

48. Ghobakhlou, A., D. Zhang and N. Kasabov *An Evolving Neural Network Model for Person Verification .Combining Speech and Image*, Lecture Notes of Computer Science, vol. 3316, Springer, 2004, 381-386.

49. Song Q. , and N. Kasabov, *TWRBF – transductive RBF Neural Network with Weighted Data Normalization*, Lecture Notes in Computer Science, Vol.3316, Springer Verlag, 2004, 633-640.

50. Q. Song, N. Kasabov, *Weighted Data Normalization and Feature Selection for Evolving Connectionist Systems Proceedings,* in: Proc. of the Eight Australian and New Zealand Intelligent Information Systems Conference ANZIIS, Sydney, Australia Dec. 2003 (285-290)

51. Q. Song, T. Ma and N. Kasabov, *A Novel Generic Higher-Order TSK Fuzzy Model for Prediction and Applications for Medical Decision Support,* in: Proc. of the Eight Australian and New Zealand Intelligent Information Systems Conference ANZIIS, Sydney, Australia Dec. 2003 (241-245)

52. N. Kasabov, S. Pang, *Transductive Support Vector Machines And Applications In Bioinformatics For Promoter Recognition,* in: Proc. IEEE International Conference on Neural Networks and Signal Processing, Nanjing, China, Dec. 2003 (1-6), IEEE Press

53. N. Kasabov, Adaptive Neural Networks, Gene Networks, and Evolutionary Systems – Real and Artificial Evolving Intelligence, in Proc. of the 7th Joint Conference on Information Sciences, North Carolina, 26-30 September, 2003 (1381-1384)

54. D. Zhang, N. Kasabov, Q. Song, I. Nishikawa, Evolving Connectionist Modeling of Auditory, Visual and Combined Stimuli Perception Based on EEG Data, in Proc. of the 7th Joint Conference on Information Sciences, North Carolina, 26-30 September, 2003 (1361-1364)

55. G. Coghill, D. Zhang, A. Ghobakhlou, N. Kasabov, Connectionist Systems for Rapid Adaptive Learning: A Comparative Analysis on Speech Recognition, in Proc. of the 7th Joint Conference on Information Sciences, North Carolina, 26-30 September, 2003 (1365-1368)

56. G. Vachkov, N. Kasabov, Real-Time Recognition Of The Operating Modes Of Plants And Machines By Use of Self-Organizing Maps, in Proc. of the 7th Joint Conference on Information Sciences, North Carolina, 26-30 September, 2003 (1375-1380)

57. M.Futshick, A.Reeve, and N.Kasabov, Modular Decision System and Information Integration for Improved Disease Outcome Prediction, in: Proc. of the European Conference on Computational Biology, France, 2003, in print

58. N.Kasabov, Q.Song, I.Nishikawa, *Evolutionary Computation for Dynamic Parameter Optimisation of Evolving Connectionist Systems for On-line Prediction of Time Series with Changing Dynamics,* Proc. of the International Joint Conference on Neural Networks, IJCNN 03, Portland, Oregon, July 2003 (438-443)

59. L.Goh, N. Kasabov, *Integrated Gene Expression Analysis of Multiple Microarray Data Sets Based on a Normalization Technique and on Adaptive Connectionist Model ,* Proc. of the International Joint Conference on Neural Networks, IJCNN 03, Portland, Oregon, July 2003 (1724-1728)

60. N.Kasabov, G.Venkov, S.Minchev, *Neural Systems for Solving the Inverse Problem of Recovering the Primary Signal Waveform in Potential Transformers,* Proc. of the International Joint Conference on Neural Networks, IJCNN 03, Portland, Oregon, July 2003 (2124-2129)

61. Ghobakhlou, Nikola Kasabov, *A Methodology for Adaptive Speech Recognition Systems and a Development Environment* in Proc. of Artificial Neural Networks and Neural Information Processing ICANN/ICONIP 2003 International Conference, Istanbul, Turkey, June 2003 (316-319)

62. W. Abdulla, V. Kecman, N. Kasabov, *Speech-background classification by using SVM technique,* in Proc. of Artificial Neural Networks and Neural Information Processing ICANN/ICONIP 2003 International Conference, Istanbul, Turkey, June 2003 (310-315)

63. N. Kasabov and Song, Q. *GA-Optimisation of evolving connectionist systems for classification with a case study from bio-informatics,* Proc. of ICONIP'2002, Singapore, November, IEEE Press (2002)

64. Kasabov, N. and D. Dimitrov. *A method for gene regulatory network modelling with the use of evolving connectionist systems.* Proc. of ICONIP'2002 - International Conference on Neuro-Information Processing, Singapore, November 2002, IEEE Press (2002)

65. N. Kasabov, Evolving connectionist systems for dynamic modelling and knowledge discovery: methods, tools, applications, IEEE Int. Symposium on Intelligent Systems, St Konstantin, Bulgaria, 9-12 Sept. 2002, IEEE Press (2002)

66. Futschik, M. and N. Kasabov, Fuzzy clustering of gene expression data, Proc. of World Congress of Computational Intelligence WCCI'2002, Hawaii, 12-17 May, IEEE Press (2002)

67. Watts, M. and N. Kasabov, Evolutionary optimisation of evolving connectionist systems, Proc. of World Congress of Computational Intelligence WCCI'2002, Hawaii, 12-17 May, IEEE Press (2002)

68. Futschik M., and Kasabov, N., *Evolving Fuzzy Neural Networks for Knowledge Discovery from Gene Expression Data – A Case Study,* RECOMB'2001 Proceedings - Currents in

17

Computational Molecular Biology 2001, Lengauer, T., Sankoff, D., (eds) 22-25 April 2001, Montreal, Canada (2001) 175-178

69. Kasabov, N., Futschik, M.E., and Middlemiss, M.J., *Knowledge Based Neural Networks for On-Line and Off-Line Modeling and Rule Extraction in Bioinformatics*, CGBI'2001, Proc. of the Atlantic Symposium on Computational Biology, Genome Information Systems and Technology, eds. C.Wu, P.Wang, and J.Wang, 15-17 March 2001, Durham, North Carolina, USA (2001) 240-244

70. D. Deng and N. Kasabov, *An evolving localised learning model for on-line image colour quantisation*, Proc. Inter. Conf. on Image Processing 2001, Thessaloniki, Greece. Oct. 2001, 906-909

71. Woodford. B.J. and Kasabov, N.K. *Ensembles of EFuNNs: An architecture for a multi module classifier.* Proceedings of FUZZ-IEEE 2001 - The 10th IEEE International Conference on Fuzzy Systems. IEEE Press. Melbourne, 2-5 December (2001) 441-445

72. Deng. D., and Kasabov, N., *Evolving Localised Learning for On-Line Colour Image Quantisation*, Proceedings of the International Conference on Vision Computing, November 2000, Hamilton, New Zealand (2000) 186-191

73. Kasabov, N., *Evolving Connectionist Systems – a Symbiosis of Learning and Evolution*, Proceedings of ICONIP'2000, November 14-18. 2000, Taejon, Korea, 676-680

74. Ghobakhlou, A., Watts. M., and Kasabov, N., *On-Line Expansion of Output Space in Evolving Fuzzy Neural Networks* Proceedings of ICONIP'2000, November 14-18, 2000, Taejon, Korea, 891-896

75. Iliev, G., and Kasabov, N., *Tracking of Narrow Band Signals Using Constrained Adaptive Second-Order Filters*, Proceedings of ICONIP'2000, November 14-18, 2000, Taejon, Korea, 1367-1370

76. Song, Q.. and Kasabov, N., *Dynamic Evolving Neuro-Fuzzy Inference System (DENFIS): On-Line Learning and Application for Time-Series Prediction* Proceedings of the 6th International Conference on Soft Computing, October 1-4, 2000, Iizuka, Japan, (2000) 696-702

77. Koprinska, I., and Kasabov, N., *Evolving Fuzzy Neural Network for Camera Operations Recognition* Proceedings of the International Conference on Pattern Recognition, September 3-7, 2000, ICPR, Barcelona Vol. II, 523-526

78. Deng, D., and Kasabov, N., *ESOM: An Algorithm to Evolve Self-Organizing Maps from On-Line Data Streams*. In: Shun-Ichi Amari, C. Lee Giles, Marco Gori, Vincenzo Piuri (eds) Proceedings of the IJCNN'2000: New Challenges and Perspectives for the New Millennium, Como, Italy. July 24-27, 2000 Vol. VI, 3-8

79. Kasabov, N., and Iliev, G., *Hybrid Systems for Robust Recognition of Noisy Speech Based on Evolving Fuzzy Neural Networks and Adaptive Filtering*, Shun-Ichi Amari, C. Lee Giles, Marco Gori. Vincenzo Piuri (eds) Proceedings of the IJCNN'2000 on Neural Networks Neural Computing: New Challenges and Perspectives for the New Millennium, Como, Italy, July 24-27, 2000 Vol. V, 91-96

80. Kasabov, N., Deng, D., Erzegovesi, L., Fedrizzi, M., and Beber, A., On-line decision making and prediction of financial and macroeconomic parameters on the case study of the European Monetary Union, H. Bothe and R. Rojas (eds) Proceedings of the second ICSC Symposium on Neural Computation, May 23-26. 2000. Berlin. ISCS (International Computer Science Conventions. Canada/Switzerland), (2000) 301-307

81. Taylor, J., Kasabov, N., and Kilgour, R.. *Modelling the Emergence of Speech Sound Categories in Evolving Connectionist Systems*. Proceedings of the JCIS'2000 – the Joint Conference on Information Sciences, Atlantic City, February 2000, Association of Intelligent Machinery Inc., (2000) 844-848

82. Iliev, G., and Kasabov, N. *Channel equalisation using adaptive filtering with averaging*, in: *Proceedings of Joint Conference of Information Sciences (JCIS)*, Atlantic City, New Jersey, February (2000)

83. Abdulla. W. and Kasabov, N., Parallel *CHMM speech recognition systems*, *Proceedings of Joint Conference of Information Sciences (JCIS)*, Atlantic City, New Jersey, February (2000)

84. Abdulla, W., and Kasabov, N., *Speech Recognition Enhancement via Robust CHMM Speech Background Discrimination*, Proceedings of the ICONIP/ANZIIS/ANNES'99 Workshop "Future directions for intelligent systems and information sciences, Dunedin, 22-23 Nov.1999, N.Kasabov and K.Ko (eds) (1999) 65-70

85. Iliev, G., and Kasabov, N., *Adaptive Filtering with Averaging in Noise Cancellation for Voice and Speech Recognition*, Proceedings of the ICONIP/ANZIIS/ANNES'99 Workshop "Future directions for intelligent systems and information sciences, Dunedin, 22-23 Nov.1999, N.Kasabov and K.Ko (eds) (1999) 71-75

86. Deng, D. and Kasabov, N., *Evolving Self-orginizing Map and its Application in Generating a World Macroeconomic Map*, in: Emerging Knowledge Engineering and Connectionist-based Systems Proceedings of the ICONIP/ANZIIS/ANNES'99 Workshop "Future directions for intelligent systems and information sciences, Dunedin, 22-23 Nov.1999, N.Kasabov and K.Ko (eds), (1999) 7:12

87. Woodford, B., Kasabov, N., and Wearing, H., *Fruit Image Analysis using Wavelets, In: Emerging Knowledge Engineering and Connectionist-based Systems*, Proceedings of the ICONIP/ANZIIS/ANNES'99 Workshop "Future directions for intelligent systems and information sciences, Dunedin, 22-23 Nov.1999, N.Kasabov and K.Ko (eds), (1999) 88-92

88. Koprinska I., and Kasabov, N., *An Application of Evolving Fuzzy Neural Network for Compressed Video Parsing*, in: Emerging Knowledge Engineering and Connectionist-based Systems, Proceedings of the ICONIP/ANZIIS/ANNES'99 Workshop "Future directions for intelligent systems and information sciences, Dunedin, 22-23 Nov.1999, N.Kasabov and K.Ko (eds), (1999) 96-102

89. Hegg, D., Cohen, T., Kasabov, N., and Song, Q., *Intelligent Control of Sequencing Batch Reactors (SBRs) for Biological Nitrogen Removal*, in: Emerging Knowledge Engineering and Connectionist-based Systems, Proceedings of the ICONIP/ANZIIS/ANNES'99 Workshop "Future directions for intelligent systems and information sciences, Dunedin, 22-23 Nov.1999, N.Kasabov and K.Ko (eds), 152-155

90. Deng, D., Koprinska, I., and Kasabov, N., *RICBIS - New Zealand Repository for Intelligent Connectionist-Based Information Systems*, in: Emerging Knowledge Engineering and Connectionist-based Systems Proceedings of the ICONIP/ANZIIS/ANNES'99 Workshop "Future directions for intelligent systems and information sciences, Dunedin, 22-23 Nov.1999, N.Kasabov and K.Ko (eds),182-185

91. Watts, M., Woodford, B., and Kasabov N., *FuzzyCOPE - A Software Environment for Building Intelligent Systems - the Past, the Present and the Future*, in: Emerging Knowledge Engineering and Connectionist-based Systems, Proceedings of the ICONIP/ANZIIS/ANNES'99 Workshop "Future directions for intelligent systems and information sciences, Dunedin, 22-23 Nov.1999, N.Kasabov and K.Ko (eds) 188-192

92. Ghobakhlou, A., Song, Q., and Kasabov, N., *ROKEL: The Interactive learning and Navigating Robot of the Knowledge Engineering laboratory at Otago*, in: Emerging Knowledge Engineering and Connectionist-based Systems, Proceedings of the ICONIP/ANZIIS/ANNES'99 Workshop "Future directions for intelligent systems and information sciences, Dunedin, 22-23 Nov.1999, N.Kasabov and K.Ko (eds) 57-59

93. Kim, J., Mowat, A., Poole, P., and Kasabov, N., *Applications of Connectionism to the Classification of Kiwifruit Berries from Visible-near Infrared Spectral Data*, in: Emerging Knowledge Engineering and Connectionist-based Systems, Proceedings of the ICONIP/ANZIIS/ANNES'99 Workshop "Future directions for intelligent systems and information sciences, Dunedin, 22-23 Nov.1999, N.Kasabov and K.Ko (eds)213

94. Futschik, M; Schreiber, M; Brown, C, and Kasabov, N. (1999) *"Comparative Studies of Neural Network Models for mRNA Analysis"*, in Proceedings of the International Conference on Intelligent Systems for Molecular biology, Heidelberg, August 6-10 (1999)

95. Abdulla, W. and Kasabov, N., *Two pass Hidden Markov Model for speech recognition systems*, in: *Proceedings of International Conference of Information and Communication Systems (ICICS-99)*, Singapore, Dec. 1999

96. Kasabov, N., Deng, D., Erzegovezi, L., Fedrizzi, M., and Beber, A., *Hybrid Intelligent Decision Support Systems and Applications for Risk Analysis and Prediction*, International conference on intelligent systems for investment decision making, Bond University, Gold Cost, December (1999)

97. Iliev, G., and Kasabov, N. *Adaptive noise cancellation for speech applications*, Proceedings of ICONIP'99, November 1999, Perth, Australia, IEEE Press (1999) 192-197

98. Kasabov, N. and Fedrizzi, M. *Fuzzy neural networks and evolving connectionist systems for intelligent decision making*, Proceedings of the Eight International Fuzzy Systems Association World Congress, Taiwan, August 17-20 (1999)

19

99. Kasabov, N. *Evolving connectionist systems and applications for adaptive speech recognition*, Proceedings of IJCNN'99, Washington DC, July 1999, IEEE Press,

100. Kasabov, N and Woodford, B., *Rule insertion and rule extraction from evolving fuzzy neural networks: algorithms and applications for building adaptive, intelligent expert systems*, 1999 IEEE International Fuzzy Systems Conference Proceedings, Seoul, August 1999, v.III (1999)1406-1409

101. Kasabov, N., Tuck, D., and Watts, M., *Implementing Knowledge and Data Fusion in a Versatile Software Environment for Adaptive Learning and Decision-Making*, in: Proceedings of the International Conference on Data Fusion, San Hose, July 1999 (1999)

102. Tuck, D., Watts, M., Song, Q., and Kasabov, N., *A Practical and Flexible Environment for Adaptive Knowledge and Data Fusion Applications*. in: Proceedings of International Conference On Applications of Intelligent Systems, Melbourne, Sept. 1999 (1999)

103. Kasabov, N. *Evolving fuzzy neural networks for adaptive, on-line intelligent agents and systems*, in: O. Kaynak, S. Tosunoglu and M. Ang (eds) Recent Advances in Mechatronics, Springer Verlag , Singapore (1999): Proceedings of the international conference, Istanbul, Turkey, 24-26 May 1999, 27-41.

104. Kasabov, N. *ECOS - A framework for evolving connectionist systems and the 'eco' training method*, in: S.Usui and T.Omori (eds) Proceedings of ICONIP'98 - The Fifth International Conference on Neural Information Processing, Kitakyushu, Japan, 21-23 October 1998, IOS Press, vol.3, 1232-1235

105. Watts, M. and Kasabov, N. *Genetic algorithms for the design of fuzzy neural networks*, in: S. Usui and T. Omori (eds) Proceedings of ICONIP'98 - The Fifth International Conference on Neural Information Processing, Kitakyushu, Japan, 21-23 October 1998, IOS Press, vol.2, 793-796

106. Kasabov, N., Postma, E., and van den Herik, J., *AVIS - An Integrated Connectionist Framework for Audio and Visual Information Processing Systems*, in: T. Yamakawa and G. Matsumoto (eds) Methodologies for the Conception, Design and Application of Soft Computing, World Scientific, 1998, 422-425

107. Kasabov, N. *Evolving fuzzy neural networks - algorithms, applications and biological motivation*, in: T. Yamakawa and G. Matsumoto (eds) Methodologies for the Conception, Design and Application of Soft Computing. World Scientific, 1998, 271-274

108. Kasabov, N. *Theory and applications of evolving connectionist agents and systems*, Proceedings of the 1998 international conference on Neural Networks and Brain (NN&B), Beijing, October 27-30 (1998). Publishing House of Electronics Industry, China, 668-671

109. Postma, E., Kasabov, N. and van den Herik, J. Enhancing recognition systems through an integrated processing of visual and audio information, *Proc. 1998 IEEE International Conference on Systems, Man and Cybernetics*, San Diego, California, USA, 11-14 October, IEEE Press (1998)

110. Postma, E.O., Kasabov, N., and Herik, H.J. van. *Dynamic Audio-Visual Features for Person Identification* Proceedings of the 10th Netherlands/Belgium Conference on Artificial Intelligence, BNAIC'99 (eds) H. La Poutré and H. J. van den Herik) (1998) 107-116.

111. Kozma, R. and Kasabov, N. *Rules of Chaotic Behaviour Extracted from the Fuzzy-Neural Network FuNN*, in: Proceedings of World Congress on Computational Intelligence WCCI'98, International Conference on Fuzzy Systems, IEEE Press, Ancorage, Alaska, May (1998) 1159-1163

112. Kasabov, N. *Adaptation in intelligent multi-modular systems: A case study on adaptive speech recognition*, R.Trappl (ed), Proceedings of the European Meeting on Cybernetics and Systems Research - EMCSR'98, Austrian Society for Cybernetic Studies, Vienna, 14-17 April (1998) 622-627.

113. Kasabov, N., Kozma, R. and Duch, W. *Rule extraction from linguistic rule networks and from fuzzy neural networks: propositional versus fuzzy rules*, in: Proceedings of the Conference on Neural Networks and Their Applications NEURAP'98, Marseilles, France, 11-13 March (1998) 403-406

114. Kasabov, N. *Fuzzy rule extraction, reasoning and rule adaptation in fuzzy neural networks*, in: Proceedings of the International Conference on Neural Networks ICNN'97. Houston, May 1997, IEEE Press (1997) 102-107

20

115. Kasabov, N. and Watts, M. *Genetic algorithms for structural optimisation, dynamic adaptation and automated design of fuzzy neural networks,* in: Proceedings of the International Conference on Neural Networks ICNN'97, Houston, May 1997, IEEE Press (1997) 97-101

116. Kasabov, N. and Kozma, R. *Chaotic adaptive fuzzy neural networks and their applications to phoneme-based spoken language recognition,* in: Proceedings of International Conference Vision, Recognition, Action: Neural Models of Mind and Machines, Boston, May 1997, Boston University (1997) 109

117. Kozma, R., Kasabov, N., Swope, J. and Williams, M. *Neuro-fuzzy- chaos analysis for building hybrid connectionist systems,* in: Proceedings of the 1997 International Conference on Systems, Man and Cybernetics, Orlando, IEEE Press (1997) 3025 - 3029

118. Kozma, R., Kasabov, N., Swope, J. and Williams, M. *Combining neuro-fuzzy and chaos techniques for intelligent systems: heart rate variability case study.* in: Proceedings of the International Conference on Neural Information Processing ICONIP'97, Dunedin, Springer Verlag, Singapore (1997) 162-165

119. Kasabov, N., Kozma, R., Kilgour, R., Laws, M., Taylor, J., Watts, M., and Gray, A. *Hybrid connectionist-based systems for speech recognition - HySpeech/2.* in: Proceedings of the International Conference on Neural Information Processing ICONIP'97, Dunedin, Springer Verlag Singapore (1997) 1055-1060

120. Gray, A., Kilgour, R. and Kasabov, N. *An agent based framework for modular speech recognition and language processing systems,* in Proceedings of the International Conference on Neural Information Processing ICONIP'97, Dunedin, Springer Verlag Singapore (1997) 1076-1079

121. Kim. J.S., Mowatt, A., and Kasabov, N., *Connectionist systems for fruit growth prediction based on infrared spectra processing.* in: Proceedings of the International Conference on Neural Information Processing ICONIP'97, Dunedin, Springer Verlag Singapore (1997) 780 - 784

122. Topchy, A., Lebedko, O., Miagkikh, V., and Kasabov, N. *An Approach to Radial Basis Function Networks Training based on Cooperative Evolution and Evolutionary Programming,* in: Proceedings of the International Conference on Neural Information Processing ICONIP'97, Dunedin, 24- 28 November, 1997, Springer Verlag Singapore (1997) 253-258

123. Zhou, Q., Purvis, M. and Kasabov, N. *Membership function selection for fuzzy neural networks,* in Proceedings of the International Conference on Neural Information Processing ICONIP'97, Dunedin, 24- 28 November, 1997, Springer Verlag Singapore (1997) 785 - 788

124. Purvis, M., Kasabov, N., Benwell, G., Zhou, Q., and Zhang, F. *Neuro-fuzzy methods for Environmental Modelling,* in: Proceedings of the Second International Symposium on Environmental Software Systems. Whistler, Canada (1997) 30 - 37

125. Kasabov, N. *Advanced Neuro-Fuzzy Engineering: Adaptation and Forgetting in Fuzzy Neural Networks.* in: Proceedings of the International Discourse on Fuzzy Logic and the Management of Complexity FLAMOC'96, Sydney, Sydney University of Technology (1996) 213-222

126. Kasabov, N. *Adaptive learning in modular fuzzy neural networks.* in: Lecture Notes in Computer Science/Artificial Intelligence: Proceedings of the International Conference on Neural Information Processing ICONIP'96, Hong Kong, Springer Verlag Singapore (1996) 1096-1102

127. Kasabov, N. *Investigating the adaptation and forgetting in fuzzy neural networks through a method of training and zeroing.* in: Proceedings of the International Conference on Neural Networks ICNN'96: Plenary, Panel and Special Sessions, Washington DC, IEEE Press (1996) 118-123

128. Kasabov, N. *Learning strategies for adaptive fuzzy neural networks,* in Proceedings of the International Conference on Fuzzy Systems, Neural Networks and Soft Computing Iizuka'96, Iizuka, Japan, World Scientific (1996) 578-581

129. Kasabov, N. *Connectionist methods for fuzzy rules extraction, reasoning and adaptation* in Proceedings of the International Conference on Fuzzy Systems, Neural Networks and Soft Computing Iizuka'96, Iizuka, Japan, World Scientific, (1996) 74-77

130. Kasabov, N. *Learning strategies for modular connectionist hybrid systems: a case study on phoneme-based speech recognition,* in Proceedings of the World Congress of Neural Networks WCNN'96, San Diego, Lawrence Erlbaum (1996)

131. Kasabov, N. *Investigating neuro-fuzzy approach to building adaptive intelligent information systems* in Proceedings of the First International Panel Conference on Soft and Intelligent Computing, SIC'96, Budapest, Technical University of Budapest (1996) 83 - 88

132. Purvis, M., Kasabov, N.. Zhang, F. and Benwell, G. *Connectionist-based methods for knowledge acquisition from spatial data* in Proceedings of the IASTED International Conference, Gold Coast, Australia, IASTED-ACTA Press (1996) 151-154

133. Yeap, W.K.. Sun, J., Sallis. P.J., and Kasabov, N.K. *From Generative Lexicon to Interpretation*, Proceedings of the European International Conference on Speech and Language, October 1996, St Petersburg, Russia (1996) 40 - 44

134. Kasabov, N., Cohen, A., Bailey, M., and Mason, P. *Using AI in pollution control – case studies of Neural Network and Fuzzy Control Applications*, in Proceedings of New Zealand Biotechnology Association Annual Scientific Meeting, Dunedin (1995)

135. Kasabov, N. *Building comprehensive AI and the task of speech recognition*, in Proceedings of the International Workshop on Applications of Neural Networks to Telecommunications, J.Alspector, R.Goodman and T.Brown eds. Stockholm, Lawrence Erlbaum Ass. Publ. (1995) 178-187

136. Kasabov, N. *Hybrid fuzzy connectionist rule-based systems and the role of fuzzy rules extraction*, in Proceedings of FUZZ-IEEE/IFS'95 - Fourth IEEE International Conference on Fuzzy Systems. Yokohama, IEEE Press (1995) 49-56

137. Bailey, M., Solomon, C., Kasabov, N. and Greig, S. *Hybrid Systems for Medical Data Analysis and Decision Making - A Case study on Varicose Vein Disorders*, in Proceedings of ANNES'95 - the Second New Zealand International Conference on Artificial Neural Networks and Expert Systems, Dunedin. IEEE Computer Society Press. Los Alamitos (1995) 265-268

138. Bailey, M.. Kasabov, N., Cohen, T.. Mason, P. and A. Grey. *Hybrid Systems for Prediction - A Case Study of Predicting Effluent Flow to a Sewage Plant*, in Proceedings of ANNES'95 - the Second New. Zealand International Conference on Artificial Neural Networks and Expert Systems. Dunedin. IEEE Computer Society Press. Los Alamitos (1995) 261-264

139. Kasabov, N., Sinclair, S., Kilgour, R., Watson, C., Laws, M. and Kassabova, D. *Intelligent Human Computer Interfaces and the Case Study of Building English-to-Maori Talking Dictionary*, in Proceedings of ANNES'95 - the Second New Zealand International Conference on Artificial Neural Networks and Expert Systems. Dunedin, IEEE Computer Society Press, Los Alamitos (1995) 294-297

140. Solomon, C., Kasabov, N.. Bailey,M., Greig,S. and van Rij, A. *Artificial computer neural networks for the assessment of the results of venous calf air plethysmography*, in Proceedings of the XII World congress on Plethysmology. London, Royal Society of Medicine- Phlebology (1995) Supplementary. 1:172-174

141. Kasabov, N. *Learning, Generalisation, Adaptation and Forgetting in Fuzzy Neural Networks and Hybrid Systems*, in Proceedings of the International Conference on Neural Information Processing ICONIP'95. Beijing, Publishing House of Electronics Industry, Beijing (1995) 973-976

142. Benwell, G., Kasabov, N., Purvis, M.. Zhang, F., McLennan, B., and Mann, S., *Spatial Analysis with Artificial Neural Networks*. in Proceedings of the Eight Australian Joint Artificial Intelligence Conference, Workshop on AI and the Environment, Canberra, Australian Defence Force Academy (1995) 43-52

143. Kasabov, N. *Towards using hybrid connectionist fuzzy production systems for speech recognition*. in Proceedings of the IEEE/Nagoya University World Wise Men/Women Workshop on Fuzzy Logic and Neural Networks/Genetic Algorithms. Nagoya, Nagoya University (1994) 9-13

144. Kasabov, N. and Peev. E. *Phoneme recognition with hierarchical self organised neural networks and fuzzy systems - a case study*. in: Proceedings of the International Conference on Artificial Neural Networks. M.Marinaro and P.Moraso (eds) Sorento, Italy, Springer Verlag (1994) 201-204

145. Kasabov, N. *Connectionist Fuzzy Production Systems as Universal Machines for Approximate Reasoning*, in Proceedings of the International Conference on Fuzzy Systems, Neural Networks and Soft Computing Iizuka'94, Iizuka, Japan, Kyushu Institute of Technology (1994) 151-152

146. Kasabov, N. *A filtering neuron and its application for building connectionist production systems*, in Proceedings of the International Conference on Neuro Information processing ICONIP'94. Seoul, IEEE Press (1994) 53-58

147. Kasabov, N. *Connectionist models for analogy-based prediction and learning fuzzy analogy rules*, in Proceedings of the 7th International Conference on Systems Research, Informatics

and Cybernetics (ICSRIC'94), Baden-Baden, Germany, International Institute for Advanced Studies in Systems Research and Cybernetics (1994) 105-110

148. Kasabov, N., Watson, C., Sinclair, S. and Kilgour, R. *Integrating neural networks and fuzzy systems for speech recognition,* in Proceedings of the Speech Science and Technology Conference SST-94. Perth, University of South Australia (1994) 462-467

149. Mann, S., Holland, P., Kasabov, N. and Morgan, R. *The integration of ecological modelling, remote sensing and GIS for monitoring and prediction in tussock grasslands,* in Proceedings of the Sixth Annual Colloquium of the Spatial Information Research Centre. Dunedin, University of Otago Press (1994) 31-44

150. Kasabov, N. and Trifonov, R. *Using hybrid connectionist systems for spatial information processing,* in Proceedings of the Fifth Colloquium of the Spatial Information Research Centre. Dunedin, University of Otago Press (1993) 85-95

151. Kasabov, N. *Learning fuzzy production rules for approximate reasoning with connectionist production systems,* in Proceedings of the International Conference on Artificial Neural Networks ICANN'93. S. Gielen and B. Kappen, (eds) Amsterdam, Springer Verlag (1993) 337-345

152. Kasabov, N., and Shishkov, S. *Approximate reasoning with parallel connectionist production systems,* in Proceedings of the International Joint Conference on Neural Networks IJCNN'93. Nagoya, Japan, IEEE (1993) 2963-2966

153. Kasabov, N., *Towards connectionist realisation of fuzzy production systems,* in Proceedings of ACNN'93 - the Fourth Australian Conference on Neural Networks. Sydney University Electrical Engineering (1993) 134-137

154. Kasabov, N., *Learning fuzzy rules through neural networks,* in Proceedings of the Artificial Neural Networks and Expert Systems Conference - ANNES'93. Dunedin, IEEE Computer Society Press (1993) 137-140

155. Kasabov, N. and Jain, L.C., *Connectionist expert systems,* in Proceedings of Artificial Neural Networks and Expert Systems Conference - ANNES'93. Dunedin, IEEE Computer Society Press (1993) 220-221

156. Kasabov, N., Nikovski, D. and Peev, E. *Speech recognition with Kohonen's self organised neural networks and hybrid systems,* in Proceedings of Artificial Neural Networks and Expert Systems Conference - ANNES'93. Dunedin, IEEE Computer Society Press (1993) 113-118

157. Kasabov, N. *Neural networks and fuzzy systems for knowledge engineering,* in Proceedings of the 13th New Zealand Computer Society Conference. Auckland (1993) 338-352

158. Kasabov, N. and Petkov, S. *Approximate Reasoning with Hybrid Connectionist Logic Programming Systems,* in Artificial Neural Networks 2. I.Aleksander and J.Taylor (eds) Elsevier Science Publishers B.V. North-Holland (1992) 749-752

159. Kasabov, N. and Shishkov, S. *On the problem of connectionist production systems - models and their implementation,* in Artificial Neural Networks 2. I.Aleksander and J.Taylor (eds) Elsevier Science Publishers B.V.(North-Holland) (1992) 699- 702

160. Kasabov, N. *COPE-a hybrid connectionist production system environment,* in Proceedings of the Third Australian Conference on Neural Networks (ACNN'92). Sydney, Sydney University Electrical Engineering (1992) 135-138

161. Kasabov, N. and Petkov, S. *Neural networks and logic programming - a hybrid model and its applicability to building expert systems,* in Proceedings of the 10th European Conference on Artificial Intelligence Vienna, John Wiley & Sons (1992) 287-288

162. Lavington, S., Wang, C., Kasabov, N. and Lin, S. *Hardware support for data parallelism in production systems,* in Proceedings of the International Workshop of VLSI for AI and Neural Networks Oxford, Oxford University (1992)

163. Kasabov, N. and Clarke, G. *Towards a template-based implementation of supervised and unsupervised learning in connectionist knowledge based systems,* in Artificial Neural Networks 1. Kohonen, T. et al (eds), Elsevier Science Publishers B.V. North-Holland (1991) 477-481

Publications in conference proceedings in Bulgarian or Russian (if not specified otherwise)

164. Kasabov, N., Trishina, E. *A knowledge based production system for parallel processing: a model and its implementation on transputers* in Proceedings of the international conference on Artificial Intelligence '89. Sozopol, Bulgaria (1989) 41-47

165. Kasabov, N., Pavlova, R., *Some analytical representations for multiprocessor computing systems* in Proceedings of the Radio and Communication Annual Symposium, Sofia, Bulgaria (1986) 83-87

166. Groen, A., van den Herik, H.J., Hofland, A., Kasabov, N., Kerckhoffs, E. and Stoop, J. *Linking knowledge-based systems to conventional simulation models - current and planned research projects* in Proceedings of the Working Conference on Artificial Intelligence in Simulation, Ghent, Belgium, University of Ghent (1985) 58-62 (in English)

167. Kasabov, N., Ianev, K., Gradinarski, J., Trampov, P., Atanassov, I., Dimitrov, H., Topalov P., and Stefanova, N. *Eight-microprocessor module for parallel processing of CAMAC-data of and building modular extendable multiprocessor systems* in Proceedings of the Symposium – 40 years of the Higher Institute for Machines and Electrotechnics, Bulgaria (1985) 57-62

168. Kasabov, N. and Trampov, P. *Parallel computations in SIMD/MIMD multi-microprocessor systems with functional reconfiguration* in Abstracts of the Proceedings of Parallel Computing'83. Berlin, Springer Verlag (1983) 40 (in English)

169. Kasabov, N., Bijev, G., and Jechev, B. *Hierarchical discrete Systems and the realisation of Parallel Algorithms* in Proceedings of the Conference on Problems and Programming for Parallel computing Berlin. Springer-Verlag (1983) 415-422 (in English)

170. Kasabov, N., Dakovski, L., and Daskalov, P. *Applications of stack memory devices in microprocessor systems* in Proceedings of the 6th Bulgarian International Conference on Computer Science – Microprocessor Systems, Plovdiv, Bulgaria (1983) 16-20

171. Kasabov, N. *Design and applications of multimicroprocessor systems with functional reconfiguration* in Proceedings of 6thBulgarian International Conference on Computer Science – Microprocessor Systems, Plovdiv, Bulgaria (1983) 56-59

172. Kasabov, N., and Trampov, P. *On some applications of a multi-microprocessor system with a functional reconfiguration* in Proceedings of the 6th Bulgarian International Conference on Computer Science – Microprocessor Systems, Plovdiv, Bulgaria (1983) 35-39

173. Kasabov, N. *The structure and organisation of multi-microprocessor systems for control of technological processes. A multi-microprocessor system – operational modes and algorithms* in Proceedings of the Radio and Communication Annual Symposium, Sofia, Bulgaria (1983) 65-69

174. Kasabov, N., *Parallel computation in multi-microprocessor systems. Microprocessor control of a technological process for cutting metal without a remainder* in Proceedings of the Radio and Communication Annual Symposium, Sofia, Bulgaria (1983) 70-73

175. Kasabov, N., and Bijev, G. *Computer analysis of geometric transformations* in Proceedings of the international symposium on Automata, languages, systems '82, Bulgarian Academy of Sciences, Bulgaria (1982) 54-59

176. Kasabov, N. *On a basis of the symmetrical group of transformations and its automatic realisation* in Proceedings of an international symposium on Automata, languages and systems '82. Bulgarian Academy of Sciences, Varna, Bulgaria (1982) 93-99

177. Kasabov, N. *Parallel systems with a direct access to data – a comparative analysis* in Proceedings of the Radio and Communication Annual Symposium, Sofia, Bulgaria (1981)

178. Kasabov, N., and Kassabova, D. *A probabilistic simulation model of operations and processes in digital computers regarding input streams* in Proceedings of the Radio and Communication Annual. Sofia, Bulgaria (1980) 57-62

179. Kasabov, N., *Structural realisation of homogenous probability automata* in Proceedings of the 5th International Symposium on Applied Aspects of Automata Theory, Bulgarian Academy of Sciences, Varna, Bulgaria (1979) 49-54

180. Kasabov, N., and Pavlova, R., *Methods of factor analysis for evaluation of multiprocessor systems* in Proceedings of the 5th Bulgarian International Conference on Computer Science, Sofia, Bulgaria (1979) 11-18

181. Kasabov, N. *Structural representation of basic algebraic transformations in a finite automata* in Proceedings of the Radio and Communication Annual Symposium, Sofia, Bulgaria (1979) 49-54

182. Dakovski, L., and Kasabov, N. *Non-minimal generating sets of P_N and S_N and their finite automata realisation* in Proceedings of the Radio and Communication Annual Symposium, Sofia, Bulgaria (1978) 23-29

183. Dakovski, L.. and Kasabov, N. *About implementation of sequential circuits in computational modules* in Proceedings of the Radio and Communication Annual Symposium, Sofia, Bulgaria (1978) 57-61

184. Dakovski, L., and Kasabov, N. *Logical-, register- and system design in homogenous cellular structures* in Proceedings of the Radio and Communication Annual Symposium, Sofia, Bulgaria (1978) 91-95

185. Borovski, B., Egorov, A., and Kasabov, N. *Probabilistic models for evaluating the performance of computer systems* in Proceedings of the Radio and Communication Annual Symposium, Sofia, Bulgaria (1978) 78-83

186. Kasabov, N. *On the generation of algebraic transformations and the design of discrete systems – possibilities and problems* in Proceedings of the Radio and Communication Annual Symposium, Sofia, Bulgaria (1977) 75 - 79

187. Dakovski, L., and Kasabov, N. *Structural synthesis of random number generators* in Proceedings of the 2nd Bulgarian Conference on Computer Science, Sofia, Bulgaria (1973) 86 – 91

(g) Other Significant Conference Activities

Invitational Addresses, Keynote Speeches

1. 2008. Plenary Talk, Brazilian Congress on NN, October 2008
2. 2008. Plenary Talk, World Congress of Computational Intelligence WCCI 2008 – Workshop on Novel Computational Intelligence Techniques, Hong Kong-Macao, 7-8.06.2008
3. 2008. Plenary Talk, World Computer Congress WCC2008, Milano, 7-10.09.2008
4. 2008. Invited Talk, BioMed, Kuala Lumpur, 25-28.06.2008
5. 2007. Plenary talk, Automatics and Informatics 2007, Sofia, Bulgaria, October, 2007
6. 2007, Plenary talk, HIS 2007, Germany, September, 2007
7. 2007, Invited talk, Dynamic Brain Forum, Hakuba, Japan, March, 2007
8. 2006, Keynote speech, KES'2006, Bournemoth, UK, October 2006
9. 2006, Invited talk, ICONIP'2006, Hong Kong, October 2006
10. 2006, Keynote speech, Int. Conference 9th Fuzzy Days, Dortmund, Germany, September 2006
11. 2005, Keynote talk, BCS AI 2005, Cambridge, UK, December 2005
12. 2005, Invited talk, BISCSE, UC Berkeley, 3-5, November, 2005
13. 2005, Keynote speech. SOFA Int. conference, Szeged-Arad, Hungary, August 2005
14. 2005, Keynote speech, SAER, Varna, 2005, Bulgaria
15. 2005. Keynote speech, BioInfo. Plovdiv, Bulgaria
16. 2005, *Invited talk*, ARSO'2005 – Advanced Robotics and their Social Impact, Nagoya, June 2005
17. 2005, Keynote speech, Intern. Symposium on Computational Intelligence, Korea, 1-2 Febr.2005
18. 2004. Keynote speech, Int. Conf. on Hybrid Intelligent Systems, HIS'04, Kitakushu, Japan, December 2004
19. 2004, *Keynote speech*, ICONIP'2004 - Int. Conf. Neuro Information Processing, Calcutta, 2004
20. 2004, *Keynote speech*, The Founding meeting for the German chapter of the IEEE Computational Intelligence Society, Keiserslautern, July 2004
21. 2004, *Open lecture*, Bioinformatics: The knowledge engineering approach, Technical University of Sofia, branch Plovdiv, Bulgaria, July 2004
22. 2004, *Plenary talk*, IEEE Symposium on Intelligent Systems, Varna, Bulgaria, June
23. 2002, *Invited talk*, ICONIP'2002, November, Singapore
24. 2002, *Keynote speech*, Int. conference on Industrial Applications of Intelligent and Expert Systems, IAE, Cairns, June 2002
25. 2001, *Plenary Chair and invited talk*, CEC'2001, Seoul, Korea
26. 2000, *Invited talk*, ICONIP'2000, Taijon, Korea
27. 2000, *Closing Speech*, Iizuka'2000, Fukuoka, Japan, 1-4 October 2000.
28. 1999, *Invited lecture*, Innovation in wastewater treatment, national seminar, Auckland, 30/04/99
29. 1998, *Keynote presentation*, 3rd On-line World Conference on Soft Computing in Engineering Design and Manufacturing, 21-30 June 1998, World Wide Web
30. 1998, *Keynote speech*, Neuro-Fuzzy Day, 11 June 1998, University of Twente, The Netherlands
31. 1998, *Invited talk*, Fuzzy neural networks and speech recognition, *International workshop on Future Devices for Human-Computer Interaction*, Japanese Ministry for Science and Technology, Beppu, Japan, 16-24 January, 1998

32. 1997, *Opening lecture*, Connectionist-based systems in the age of technology, *ICONIP'97*, Dunedin, 24-28 November 1997

33. 1996, *Keynote speech*, International Discourse on Fuzzy Logic and the Management of Complexity FLAMOC'96. Sydney University of Technology, 15-18 January (1996),

34. 1996, *Invited talk*, International Conference on Neural Information Processing ICONIP'96, Hong Kong, 14-18 September, 1996,

35. 1996, *Invited talk*, International Conference on Fuzzy Systems, Neural Networks and Soft Computing, Iizuka'96, Japan, Kyushu Institute of Technology,

36. 1996, *Invited talk*, International Panel Conference on Soft and Intelligent Computing, SIC'96, Budapest

37. 1995, *Invited talk* (with T.Cohen, M.Bailey, P.Mason), Annual Conference of the New Zealand Biotechnology Association, Dunedin, 30 August,

38. 1994, *Keynote speech*, New Zealand Computer Society, ANNES SIG national seminar, Auckland

39. 1994, *Keynote speech*, New Zealand Computer Society, ANNES SIG national seminar, University of Otago,

40. 1982, *Invited talk*, Stack Memory Devices. *International conference on Memory Devices '82*. Veliko Turnovo, Bulgaria

41. 1982, *Invited talk*, Utilisation of the semigroup theory for exchange operations in magnetic domain memory. *International conference on Memory Devices*, Veliko Turnovo, Bulgaria

Tutorials and Workshops presented at International Conferences

1. 2007, Tutorial on evolving intelligent systems, ICANN 2007, Porto, September 2007
2. 2007, Tutorial on evolving intelligent systems, IJCNN 2007, Orlando, August, 2007
3. 2007, Tutorial on evolving intelligent systems, IEEE Simposia, Hawaii, April 2007
4. 2006, Tutorial on evolving intelligent systems, ICANN, September 2006, Athens
5. 2006, Tutorial on evolving intelligent systems, WCCI 2006, Montreal, August, 2006
6. 2005, Tutorial on evolving connectionist systems, IJCNN,05, Montreal, July 2005
7. 2005, Tutorial on evolving connectionist systems, ICANN'05, Warsawa, Sept. 2005
8. 2004, Tutorial on evolving connectionist systems, ICONIP'04, Calcutta, Nov. 2004
9. 2004, Tutorial on data mining and knowledge discovery in bioinformatics. Int. Joint Conf. on Neural Networks - IJCNN, Budapest, 2004
10. 2003, Adaptive neural networks for data mining and knowledge discovery, Tutorial at the Int. Joint Conf. on Neural Networks (IJCNN'03), July 2003, Portland, Oregon, IEEE and INNS
11. 2003, Knowledge-based Neural Networks for Bioinformatics, University of California at Berkley, BISC Workshop on FLINT-CIBI (USA)
12. 2000, Evolving Connectionist Systems: Methods, Tools, Applications, Tutorial at ICONIP'2000 (Taejon, Korea)
13. 2000, Evolving connectionist systems, Tutorial , euroComputation conference NC'2000 (Berlin)
14. 1999, Workshop "Future directions for intelligent systems and information sciences", Dunedin, November 1999
15. 1999, Evolving connectionist systems – methods, tools, applications, Tutorial, ICONIP'99, November 1999, Perth (1999)
16. 1999, Speech and language recognition, Tutorial Track at IJCNN'99, Washington DC, July 1999
17. 1997, Connectionist-Based Intelligent Information Systems, Tutorial, ICONIP'97, Dunedin, 24-28 November 1997
18. 1997, Hybrid Connectionist-Based Intelligent Information Systems - Methodologies, Tools, Industrial Applications. Tutorial, World Manufacturing Congress, WMC'97, 18 November 1997, Auckland
19. 1997, AI/GIS systems and their applications, Tutorial, The Second Annual Conference on GeoComputation, Dunedin, June 1997
20. 1997, Hybrid Intelligent Information Systems, Tutorial, ICNN'97 (The IEEE International Conference on Neural Networks), Houston, USA, May
21. 1996, Hybrid AI/GIS systems and their applications, Tutorial, Australian Urban and Resource Planning Information Society AURISA'96, Hobart, November 1996
22. 1996, Hybrid (neuro-fuzzy) intelligent information systems: methods, tools, industrial applications, Tutorial at Iizuka'96, (International Conference on fuzzy systems, neural networks and soft computing), Iizuka, Japan, September 1996

23. 1995, Intelligent Hybrid Systems for Problem Solving and Knowledge Acquisition, Workshop at the Second New Zealand International Conference on Artificial Neural Networks and Expert Systems ANNES'95, Dunedin, November 1995

24. 1995, Hybrid (Connectionist, Fuzzy, Symbolic) Environments and Their Applications for Building Complex Decision Making Systems, Tutorial, International Conference on Neural Information Processing (ICONIP'95- Beijing), Beijing, 1995

25. 1995, Fuzzy Data Analysis, Workshop, Eight Colloquium of the Spatial Information Research Centre of the University of Otago, Palmerston North.

26. 1994, Hybrid (Symbolic-, Connectionist-Fuzzy-, Chaotic) Systems, Tutorial, AI'94 - the Joint Australian Conference on Artificial Intelligence, Armidale

27. 1993, A. The Basics of Fuzzy Systems, Tutorial. ANNES'93 conference, Dunedin, U. Otago

28. 1993, Neural Networks for Problem Solving. Tutorial. ANNES'93 conference, Dunedin, U. Otago

(h) Audio-Visual Recordings

2000, Smart Voice Technologies, CD, Information Science Department, University of Otago.

1999, Kasabov, N. and W. Abdulla, Speech and language Processing, Tutorial Track 8, CD, IJCNN'99, Washington DC , July 1999

1998, N.Kasabov et all, Connectionist-based Information Systems, CD with the UOO606 FRST project results (software, papers) (1998)

1996, with T. Cohen and M. Bailey, Fuzzy system implementation on the Fisher & Paykel's PSC-III, Video film, in collaboration with the University of Otago Audio Visual Centre

(i) Computer Software

1. D. Greer, N. Kasabov, Q. Song, L.Goh – *Siftware: A Gene Expression Profiling Software*, 2003-2005

2. P.Hwang, D. Greer, N. Kasabov, Q. Song, P. Pang, *NeuCom – A Neurocomputing environment for intelligent decision support systems*, (www.the neucom.com), 2003 - 2006

3. Richard Walton, Dougal Greer, Nik Kasabov, Qun Song – *Cardio Vascular Disease Prediction System*, 2003

4. Song, Q. and N.Kasabov, ECOS MATLAB Toolbox, (www.kedri.info), 2002-2003

5. Abdula, W. and N.Kasabov, Speech recognition development environment, Department of Information Science, University of Otago, 1999

6. Deng, D., Koprinska, I., Kasabov, N., et al, The NZ Repository of Intelligent Connectionist-Based Modules and Systems – NZ-RICBIS, http://divcom.otago.ac.nz/infosci/kel/CBIIS.html

7. Kilgour, R., Kasabov, N., Kozma, R., Laws, M., et al. *HySPEECH/2 - An experimental software system for speech recognition and translation from English to Maori*, Windows95, PGSF FRST NZ/University of Otago, 1998, http://kel.otago.ac.nz

8. Watts, M., Kasabov, N., and Pearson, S. *FuzzyCOPE/3 - A hybrid fuzzy connectionist production systems environment*, MS Windows/Windows95, June 1998, University of Otago, http://kel.otago.ac.nz

9. Purvis, M., Kasabov, N., Zhang, F., et al, *AI/GIS hybrid intelligent information system for spatial information processing*, UNIX/SUN-ArchInfo, FRST NZ/University of Otago, 1997

10. Kasabov, N., Garden, J., Jones, P., Kilgour, R., Gray, A., et al. *FuzzyCOPE-1 & 2 - A hybrid fuzzy connectionist production systems environment*, MS Windows/Windows95, 1995-1997; University of Otago

11. Watson, C., Kasabov, N., Sinclair, S., Laws, M., Kilgour, R., and Kassabova, D., *Otago Speech Corpora on New Zealand English*, CD, Windows95/UNIX, University of Otago, 1995, http://kel.otago.ac.nz

12. Kasabov, N. et al, *COPE* - Connectionist production systems environment, MS DOS, Technical University of Sofia, 1992

13. Kasabov, N. and Nikolaev, N. *GESPAR* - Generator of Expert Systems for Parallel Computers, MS DOS, TU Sofia, 1990

14. Kasabov, N., Besenshek, D.Georgiev and Svetlin. *GESMI* - Generator of Expert Systems, MS DOS, VMS, TU Sofia, 1987

(k) Patents

27

1. N.Kasabov, M. Futschik, M.Sullivan, A.Reeve, *Method* and *Medical Decision Support System Utilizing Gene Expression and Clinical Information*, PCT/US03/25563, 15.08. 2003

2. N.Kasabov, A.Reeve, M. Futschik, M.Sullivan, and P. Guildford, *Medical Applications of Adaptive Learning Systems using Gene Expression Data*, Patent USA, PCT WO 03/079286

3. N. Kasabov, A. Ghobakhlou, *Adaptive Sound and Image Learning System and Method, PCT WO 2005/038774 A1*.

4. Kasabov, N., and Q. Song, *Transductive Neuro-Fuzzy Inference Method for Personalised Modelling, PCT WO 2005/048185 A1*.

5. Kasabov, N., *Adaptive learning system and method*, Patent USA, PCT WO 01/78003, 18.10.2001

6. Kasabov, N., and Abdulla, W., S*peech recognition system and method*, PCT patent, WO 02/23525 A1

7. Kasabov, N., *Multi-microprocessor system*, 258015 Czechoslovakia, 2/6/1989

8. Kasabov, N. and Dakovski, L. *Stack Memory Device*, 1026164 Russia, 1/3/1983 (in Russian)

9. Dakovski, L. and Kasabov, N. *Bus-register device for information processing*, 4 362 926 USA, 7/12/1982

10. Dakovski, L. and Kasabov, N. *Numerical Control of Machines*, 2037040 UK, 24/11/1982

11. Dakovski, L. and Kasabov, N. *Stack Memory Device*, 4 305 138 USA, 8/12/1981

12. Dakovski, L. and Kasabov, N. *Arithmetische Registereinrichtung* Offenlegunsshrift, DE3128816A1 Bundesrepublik Deutschland, 22/7/1980

13. Dakovski, L. and Kasabov, N. *Dispositif memoire formant pile*, 79 26385 France, 24/10/1979

Patents (inventions) published in Bulgarian language (The titles are translated in English. Pre-prints in the original language are available from the author or from the Institute of Inventions in Sofia, Bulgaria)

14. Kasabov N. et al, A *variable word- length computer memory*,62135, Bulgaria, 19/08/1983

15. Kasabov, N. *Multi-microprocessor system*, 36605 Bulgaria, 22/9/1983

16. Kasabov, N. and Dakovski, L. *Method for permutation of data records*, 35714 Bulgaria, 1/4/1983

17. Kasabov, N. et al, *An electronic device for a direct access to computer memory*, 36902 Bulgaria, 18/11/1983

18. Kasabov, N. and Dakovski, L. *Arithmetic register device*, 33404 Bulgaria, 22/07/1980

19. Kasabov, N. *n – switch element*, 29707 Bulgaria, 05/02/1979

20. Kasabov, N. and Dakovski, L. *Cyclic automata*, 27684 Bulgaria, 3/5/1978

21. Dakovski, L. and Kasabov, N. *2^n -- Universal device for realisation of permutation automata*, 26333 Bulgaria, 1/3/1978

22. Dakovski, L. and Kasabov, N. A m*ethod and a device for realisation of asynchronous automata*, 26334 Bulgaria, 27/3/1978

23. Dakovski, L. and Kasabov, N. An electronic d*evice for realisation of finite automata*, 26335 Bulgaria, 27/3/1978

24. Kasabov, N. and Dakovski, L. A m*ethod and a bus register device for the realisation of sequential finite automata*, 29106 Bulgaria, 08/11/1978

25. Dakovski, L. and Kasabov, N. *Stack Memory Device*, 29114 Bulgaria, 08/11/1978

26. Dakovski, L. and Kasabov, N. A m*ethod for discrete signal commutation and control of electronic commutation devices*, 25630 Bulgaria, 31/5/1977

(I) Other Creative Works

Kim, J., Kozma, R., Kasabov, N., Gols, B., Geerink, M. and Cohen, T. A fuzzy neural network model for the estimation of he feeding rate to an anaerobic waste water treatment process, Departmental Technical Report, Department of Information Science, University of Otago, August 1998

Kasabov, N, 20 entries in the Short Bulgarian Encyclopaedia for Mathematical and Physical Sciences, 1988-90 (in Bulgarian)

University Service

(a) <u>Positions held within Department/School/Division</u>
<u>Last 10 Years</u>
Member of the Research Committee, Faculty of Design and Creative Technologies, Auckland University of Technology, 2005-

Member of the Research Committee, Faculty of Business, Auckland University of Technology, 2003-2004

Founding director of the Knowledge Engineering Research Laboratory http://kel.otago.ac.nz, Department of Information Science, University of Otago, 1994-2002

Member of the Graduate Committee, Information Science Department, University of Otago, 1994 – 2001

Prior to the last 10 Years

Deputy Director of the Artificial Intelligence Research Laboratory, Technical University of Sofia-Bulgaria, 1987-91

Member of the Faculty Board, Faculty of Automation and Computing, Technical University in Plovdiv, Bulgaria, 1987-91

Deputy Dean for International Relations, Faculty of Radio-electronics, Technical University of Sofia, 1987-89

(b) Positions held at University level

Last 10 years

Member of the Academic Board, Auckland University of Technology, 2002-2004

Founding director of the Knowledge Engineering and Discovery Research Institute, www.kedri.info, Auckland University of Technology, since June 2002

Co-ordinator and principal researcher of the University Emerging Research Theme "Connectionist-based information systems", University of Otago, 1996-2002

Prior to the last 10 years

Director of International Graduate School in AI, TU Sofia, 1988-91

Professional Activities

(a) Academic and Professional Advice and Services

Top Achiever Doctoral Committee (Bright Future Scholarship Committee) FRST NZ, since 1999

RSNZ, Member of the new fellow selection committee, 2003-

Otago Institute Council (The Otago Branch of the Royal Society of New Zealand), 1998 till 2002

Marsden Fund, New Zealand, Reviewer, since 1996.

FRST (Foundation for Research Science and Technology, New Zealand), Reviewer, since 1994.

Australian Research Council, Research proposal reviewer, since 1995.

Multiple Sclerosis Society, Australia, Research proposal reviewer, 1996.

Royal British Society, UK, Research proposal reviewer, 1992-1997.

School of Pharmacy, University of Otago, Consultant on a PhD research project, 1995-1998.

School of Physical Education, University of Otago Consultant on a PhD research project, 1997.

Departments of Psychology and Computer Science, University of Otago Consultant on a MSc project, 1994-1997.

Centre of Neuro-sciences, Sofia, Bulgaria, Consultant and project proposal reviewer, 1990 - 92.

University of Essex, UK, Convenor of a multi-disciplinary seminar on neural networks, 1991.

(b) Service to External Academic and Professional Activities

(i) Service to, or leadership in, academic discipline or professional associations:

APNNA, President, 2007-2008

INNS, President Elect, 2007

INNS, Vice president and Member of the Governing Board, 2005-2007

IEEE, Senior Member, since 2001

IEEE Computational Intelligence Society, Neural Networks technical Committee, Adaptive systems taskforce co-ordinator, since 2004

IEEE Computational Intelligence Society, Intelligent Systems Applications technical Committee, Taskforce co-ordinator on Biomedicine and Bioinformatics, since 2004

IFIP (International Federation for Information Processing) – member of the TC12 group and chair of 12.2 sub-group, 1998-2004.

APNNA (Asia Pacific Neural Network Assembly) – member of the Governing Board, since 1993.

New Zealand Computer Society, Chairman of the "Artificial Neural Networks and Expert Systems" Special Interest Group - ANNES SIG, 1993-1996
IEEE Robotics and Automation Society, Member of an International Board, 1996-98

General Conference Chair and co-chair of professional conferences

ICONIP'2008, 25-28.11.2008, Auckland, General Chair
NNN08, 24-25.11.2008, Auckland, Program Chair
HIS 2007, Program co-chair, Kaiserslautern, Germany, September, 2007
IJCNN'2007, Florida, USA, Program Co-Chair
HIS & NCEI'06, Auckland 13-15 2006, General Chair
EFS, 2006, Lancaster UK, Co-Chair
ICANN'2005, Poland, Tutorial chair
ICONIP'2004 – Calcutta, November 2004, Program Chair
IJCNN/FUZZ IEEE, 2004 – Program, vice-chair, Budapest, 2004
ICONIP'2003 – The 13th International Conference on Neural Information Processing, Istanbul, July 2003, Tutorial Chair
WCCI'2002 – The World Congress of Computational Intelligence, May 2002, Hawaii, Program co-chair of IJCNN2002
JCIS'2002, Chair of the Workshop on "Adaptive systems for speech recognition" Durham, March, 2002
FUZZ/IEEE 2001 – The 10th IEEE International Conference on Fuzzy Systems, Melbourne, Australia, December 2001, Scientific Area Chair
ANNES'2001 - The Fifth New Zealand International Conference on Artificial Neural Networks and Expert Systems, Dunedin, New Zealand, November 2001
IES'2001 – The 5th Australasia-Japan Joint Workshop on Intelligent and Evolutionary Systems, Dunedin, New Zealand, November 2001
ICONIP'2001 – The 8th International Conference on Neural Information Processing, Shanghai, China, November 2001, Chair (International Promotion)
IIZUKA'2000 – An international conference on soft computing, Japan, Program chair
ICONIP'99 - The Sixth Asian Pacific International Conference on Neural Information Processing, jointly with ANZIIS'99 and ANNES'99, Perth, Australia, November 1999
ICONIP'97 - The Fourth Asian Pacific International Conference on Neural Information Processing, jointly with ANZIIS'97 and ANNES'97, Dunedin, November 1997
ANNES'95 - The Second New Zealand International Two-Stream Conference on Artificial Neural Networks and Expert Systems, Dunedin, November 1995
ANNES'93 - The First New Zealand International Two-Stream Conference on Artificial Neural Networks and Expert Systems, Dunedin, November 1993

Organiser and Chairman of Invited Sessions at International Conferences
2006, WCCI - IJCNN and FUZZ-IEEE, 3 special sessions, Vancouver, 2006
2005, IJCNN'2005, Computational neurogenetic modelling (with L.Benuskova)
2004, ICONIP'2004, Adaptive intelligent systems (with Prof. Yamakawa)
2003, JCIS'2003, Chair of the Workshop on "Adaptive systems and brain-like computing", Durham, September, 2003
2003, Track organiser, ICONIP'2003, July, 2003, Istanbul
2002, Special session organiser, ICONIP'2002, Singapore, November
2002, Special session organiser, JCIS'2000 – Joint Conference on Information sciences, USA
2000, Workshop organiser, JCIS'2000 – Joint Conference on Information sciences, USA, Atlantic City
1999, Workshop "Future directions for intelligent systems and information sciences", November, Dunedin, 1999
1999, Special session "Adaptive speech recognition", ICONIP'99, Perth
1996, Neuro-fuzzy models and adaptive information systems, ICONIP'96, Hong Kong, 13-17 September
1996, Hybrid systems for knowledge engineering, Iizuka'96, Japan, 3-7 October
1994, Hybrid systems, Iizuka'94, Japan, 1-8 August

1994, WWW'94-IEEE/Nagoya University Wise person Workshop on Fuzzy Logic and Neural Networks/Evolutionary Computation, Nagoya, Japan

Member of international programme committees

ICANN 2007, Porto
IJCNN 2006, Vancouver
FUZZ-IEEE 2006, Vancouver
ICANN 2006, Athens
KES 2006. UK
IJCNN'2005, Montreal
ICANN'2005, Warsawa
ICONIP'2004, Calcutta
IJCNN'2004, Budapest
ICONIP'2003, Istanbul
ICONIP'2002, Singapore
IAE'2002. Australia
ICAIS'2002 - Australia
ICONIP'2001 – Shanghai. November 2001
CEC'2001, Korea, May 2001
IJCNN'2000 – Como. Italy, July 2000
Iizuka'2000 – Iizuka, Japan
CEC'2000, San Diego. July 2000
ICONIP'2000 – Seoul, November 2000
Neural Computation'2000 – Berlin, 2000
Joint Conference on Information Sciences JCIS, Atlantic City, USA, 2000
ICONIP'99 - The Sixth Asian Pacific International Conference on Neural Information Processing, Sydney, October 1999
IJCNN'99- Washington DC, July 1999
ICONIP'98 - The Fifth Asian Pacific International Conference on Neural Information Processing, Kitakyushu, Japan, October 1998
IIZUKA'98 - International Conference on neural networks, fuzzy systems and soft computing, Iizuka, Japan, October 1998
ICNN&B'98 - International Conference on Neural Networks and Brain, Beijing, 27-30 October 1998
AI'98, Australian Joint Conference on Artificial Intelligence. 13-17 July 1998, Brisbane, Australia
EIS'98 – International ICSC symposium on Engineering Intelligent Systems, Tenerife, Spain, February 11-13 1998
NC'98 – International Symposium on Neural Computation, Vienna, Austria, September 23-25 1998
AID'98 - International Conference on AI in Design, Portugal, July 1998
ISSCI'98 - Second International Symposium on Soft Computing for Industry, Anchorage, Alaska, USA, May 10-14, 1998
EIS'98 - International ICSC Symposium on Engineering of Intelligent Systems, Spain, February 1998
WMC'97 - World Manufacturing Congress, Auckland, November 1997, Programme Chairman of a Symposium
GeoComputation'97. University of Otago. August 1997
IFSA'97 Seventh World Congress of the International Fuzzy Systems Association, June 25-27 1997, Prague
BOFL'96 - International workshop on breakthrough opportunities for fuzzy logic, Yokohama, Japan, December 1996
ACNN'96 - The Seventh Australian Conference on Neural Networks, Sydney
ICONIP'96 - The Third Asian Pacific International Conference on Neural Information Processing, Hong Kong
IIZUKA'96 - International Conference on neural networks, fuzzy systems and soft computing, Iizuka, Japan

ANZIIS'96 - The Fourth Australian New Zealand Conference on Intelligent Information Systems, Adelaide, November 1996, Liaison Chair for New Zealand

AID'96 - International Conference on AI in Design, Carnegie Melon University, USA, Vice-chair for New Zealand

FLAMOC'96 - International Conference on Fuzzy Logic and the Management of Complexity, Sydney, January 1996

FUBEST'96 - The Second Workshop on fuzzy based expert systems, Sofia, October 1996

SIC'96 - International Panel Conference on Soft and Intelligent Computing, Budapest, October 1996

ICONIP'95 - The Second International Conference on Neural Information Processing, Beijing

ANZIIS'95 - The Third Australian New Zealand Conference on Intelligent Information Systems, Perth, 1995, Liaison Chair for New Zealand

ACNN'95 - The Fifth Australian Conference on Neural Networks, Sydney,

WWW'95 - IEEE/Nagoya University Wise person Workshop on Fuzzy Logic and Neural Networks/Evolutionary Computation, Nagoya, Japan

CFSA/IFIS/SOFT'95 - International Conference on Fuzzy Theory and Applications, Taiwan

ICONIP'94 - The First International Conference on Neural Information processing, Seoul, Korea

ANZIIS'94 - The Second Australian New Zealand Conference on Intelligent Information Systems, Brisbane, Liaison Chair for New Zealand

AIA'94 - The Second International Round-Table on Abstract Intelligent Agents, Rome, Italy

AIMSA'90 - Artificial Intelligence - Methodology, Systems, Applications, Varna, Bulgaria

AI'88 - Artificial Intelligence, Sozopol, Bulgaria, Vice-chair of the programming committee

(ii)   Editorship of journals and periodicals.

Associate Editor and Member of Editorial Boards:
Neural Networks, Elsevier, since 2007
IEEE Transactions of Fuzzy Systems, since December 2007
International Journal of Neural Systems, World Scientific, since 2005
IEEE Transactions of Neural Networks, since December 2005
The International Journal of Hybrid Intelligent Systems, since 2004
IEEE Transactions of Industrial Informatics, Associate Editor, 2004-2007
Computational and Theoretical Nanoscience, American Scientific Publishers, since 2003
Information Sciences, Elsevier Science, Associate Editor, since 2001
Applied Soft Computing, Elsevier, since 2000
International Journal of Computational Intelligence and Applications, Imperial College Press, London, since 2000
Neural Information Processing: Letters and Reviews, since 2004
Journal of Advanced Computational Intelligence and Informatics, Japan, since 1997
Biomedical Fuzzy and Human Sciences, Japan, 1996-2001
Australian Journal of Intelligent Information Processing Systems, since 1996

Guest editor of special issues of journals:
Journal of Computational and Theoretical Nanoscience, Computational Intelligence for Bioinformatics, 2005
Int. Journal of Comp. Intelligence and Applications, 2004
Information Sciences: 2003, 2001, 1998 and 1997
Journal of Advanced Computational Intelligence: 1998
Australian Journal of Intelligent Information Processing Systems: 1998 and 1996
International Journal of Intelligent Systems: 1997
Fuzzy Sets and Systems: 1996

Reviewer of international journals:
IEEE Transactions on Neural Networks, since 1994
IEEE Transactions on Fuzzy Systems, since 1995
IEEE Transactions on Systems, Man, and Cybernetics, since 1995
Information Sciences, since 1995
IEEE Transactions on Industrial Electronics, 1997

IEEE Trans. Data and Knowledge Engineering, since 2003
Informatica, since 1997
Journal of Advanced Computational Intelligence and Informatics, since 1997
BioSilico, since 2004
Applied Soft Computing, since 2003
Int. Journal of Comp. Intelligence and Applications, since 2002
Australian Journal of Intelligent Information Processing Systems, since 1994
Fuzzy Sets and Systems, North Holland, since 1994
Lecture Notes in Computer Science/Artificial Intelligence, since 1994
Medical and Biological Engineering and Computing, England, 1992 -1996

Community Service

(a) *Continuing Education, Community Debate and Community Development*

(i) *Some media commentaries and columns on professional matters:*

NZ Herald, April, 2008
The NZ National Business Review Magazine, The Bayer Innovation in Science Winner, December 2008
NZ Computer World, November, 2005
NZ Herald, 2002
Who is Who in the World, entries since 1995
Who is Who in Science and Engineering, entries since 1995
Who is Who in New Zealand, since 1999
Otago Daily Times, December, 2001, September 1999, May 2000
Who is Who in Asia and the pacific Nations, since 1999
People of the 20th century, Cambridge Biographical Centre, since 1999
International authors and writers - Who is Who, Cambridge Biographical centre, since 1999
Marquis *Who's Who in America,* entries 1995- 2000
World Directory of Mathematicians, listed in the NZ's entry, 1998
Bulgarian National Radio, Interview, 01/1998
Bulgarian newspaper "24 hours", Article on Intelligent Robots, 01/1998
TVNZ, 2 interviews, 11/1977
Quickface, The New Zealand Computer Society Monthly Bulletin, 8 articles on intelligent information systems and ANNES SIG, 1995-96
National Radio, NZ, Interview with Diana Burns on Intelligent information systems, 11/1996
Southern Television news report on ANNES'95 conference and on a Research Project, 11/95
Otago Daily Times, Report on ANNES'95 conference and on a Talking Computer Project, 11/95
Campus Review, vol.5, 1029, article on a research project, 1995
4XO Gold Radio Station Dunedin, Interview, 07/1995
Dunedin Star Weekender, article by Frank Campbell, 06/1995
Five articles on computing published in a general public magazine "Eni Hayat", Bulgaria; 1982-88 (in Bulgarian)
A series of five radio programmes on Computer science, National Radio, Bulgaria; 1982 (in Bulgarian)

(ii) *Conferences, seminars, and workshops (including invited addresses to community groups on professional matters; only activities aimed at the general community)*
12 lectures at secondary schools in Sofia, Bulgaria, on computing in education, 1985-89

(iii) *Public lectures*
"The World of Information, where Science, Art and Engineering Meet", Faculty of Design and Creative Technologies, AUT, April 2007
"Knowledge Engineering, Neurocomputing and Knowledge Discovery", Royal Society of NZ, Wellington, November, 2002
"Knowledge Engineering and Knowledge Discovery", Inaugural Professorial Lecture, Auckland University of Technology, September 2002

"Artificial Intelligence – Myth, or reality", Eranos lecture, University of Otago, September 2001
"Connectionist systems for data mining and knowledge discovery in Bioinformatics", University of Otago, 2001
"Data, information and knowledge and their metamorphoses" – lecture at the Otago Institute, Royal Society of New Zealand, Dunedin, May 2000
"Intelligent systems for a knowledge-based society", Inaugural Professorial Lecture, University of Otago, 22 September 1999
"Intelligent Information Systems: the present and the future", for the members of the IEEE Chapter, Singapore, November 1994

(iv) Provision of continuing education
Hands-on-Science summer school - project leader, University of Otago, 1995.
Hands-on-Science summer school - project leader, University of Otago, 1994.

(b) University Links Supporting other Providers of Community Service
(i)   Polytechnics, Colleges, Schools
Polytechnic, assistance in curriculum development, Southland Polytechnic, Invercargill, 1995
Southland Polytechnic, Invercargill, a series of lectures - 1993 and 1994
Joint projects with secondary schools, Sofia, Bulgaria, 1987-89
Joint seminars for university and school students, Sofia, Bulgaria, 1987-89

(ii)   Other Universities

Examiner of postgraduate research theses (last 15 years)
Nanyang Technological University, Singapore, PhD Thesis, 2007
Nanyang Technological University, Singapore, PhD Thesis, 2007
Indian Statistical Institute, PhD thesis, 2007
Nanyang Technological University, Singapore, PhD Thesis, 2006
Indian Statistical Institute, PhD thesis, 2006
Auckland University of Techn., Masters thesis, 2006
University of Auckland, PhD thesis, 2005
Lincoln University, PhD thesis, 2004
Deakin University, Australia, PhD thesis, 2004
University of Auckland, PhD thesis, 2002
Deakin University, Australia, PhD thesis, 2003
University of Auckland, PhD thesis, 2002
University of Auckland, Masters thesis, 2002
University of Auckland, PhD thesis, 2001
Massey University, PhD thesis, 2001
University of South Australia, PhD Thesis, 2000
University of Western Australia, PhD Thesis, 2000
Auckland University, PhD thesis, June 2000
Swinburn University, Australia, PhD Thesis, September 1999
Auckland University, PhD thesis, September,1999
Swinburn University, Australia, PhD Thesis, March,1999
Auckland University, PhD thesis, April, 1999
Swinburn University, Australia, PhD Thesis, 1998
Massey University, PhD Thesis, 1998
Swinburn University, Australia, PhD Thesis, 1997
University of New South Wales, Australia, PhD thesis, 1997
Massey University, PhD thesis, 1997
Auckland University, PhD thesis, 1997
Auckland University, Masters thesis, 1996
Massey University, Masters thesis, 1996
University of Canterbury, Masters thesis, 1996
University of Canterbury, PhD thesis, 1995
Massey University, 2 PhD theses, 1995
Auckland University, PhD thesis, 1994

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Nanyang University of Technology, Singapore, 2 Masters dissertations, 1994

Seminar talks and lectures at other Universities and Scientific Institutions (last 15 years)

University of Oxford, Oxford, UK, October 2007
Imperial College, London, UK, October 2007
University of Reggio di Calabria, Italy, October 2007
University of Trento, Italy, September 2007
University of Coimbra, Portugal, September 2007
University of Ulster, Londonderry, October 2006
Mackay University, Queensland, Australia, April 2006
University of Lausanne, Switzerland, December 2005
University College of London, Medical School, December 2005
Frounhoffer Institute and UNI-Kaiserslautern, Germany, November 2005
University of Lancaster, UK, September, 2005
Bulgarian Academy of Sciences, August 2005
University of Nagoya, Nagoya, Japan, June 2005
University of Natural Sciences, Ho Chi Min City, Vietnam, June 2005
University College London, 2004
TU of Sofia, Bulgaria, 2004
TU of Keiserslautern, Germany, 2004
Kyushu Institute of Technology, Japan, 2004, 2001
Kobe University, Japan, 2004
Ritsumeikan University, Japan, March 2003 and May 2002
University of California at Berkeley, July 2002 and December 2003
Stanford University, USA, July 2002
National Cancer Institute, Washington DC, May 2002
Pohang University, Korea, 2000
University of Auckland, June 2000
IRST and University of Trento, May, 2000
University of California at Berkeley, July 1999
University of Milano, June 1999
University of Ulm, Germany, June 1999
University of Venice, May, 1998
University of Trento, Italy, May, 1998
University of Napels, Italy, April, 1998
University of Essex, UK, December 1997
University of New South Wales, Sydney, Australia, April 1997
University of Keiserslautern, Germany, 1995
University of Trento, Italy, 1995
National Research Institute in Milano, 1995
University of Canterbury, 1995
Nanyang University of Technology, Singapore, 1993
University of Nottingham, U.K., 1991
King's College, University of London, UK, 1991
University of York, U.K., 1991
University of Essex, U.K., 1991

(c) Cultural and/or Scientific Access, Participation and Development
Participation at musical concerts at the conferences Iizuka' 2000, 1996, 1994, and ICONIP 07, Japan
Participation at folk music festivals, Dunedin, 1994

Date: 7 May 2008   Signed:

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